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MONTICELLO ENVIRONMENTAL SUMMARY FOR
CALENDAR YEAR 1996 11/97

Monticello Mill Tailings Site

Environmental Summary for Calendar Year 1996

November 1997

U.S. Department of Energy

Work Performed Under DOE Contract Number DE-AC13-96GJ87335 for the U. S. Department of Energy

mactec-ers
MACTEC ENVIRONMENTAL RESTORATION SERVICES, LLC

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MEMO TO: Distribution

FROM: Michael J. Gardner MJG

DATE: November 14, 1997

SUBJECT: Distribution of *Monticello Mill Tailings Site Environmental Summary for Calendar Year 1996*

Attached for your information is the *Monticello Mill Tailings Site Environmental Summary for Calendar Year 1996*, which has been approved for public release by DOE-GJO. The report summarizes environmental monitoring data collected at the Monticello Mill Tailings Site during 1996 and includes (1) an update of the site's environmental management performance, (2) a comparison of the monitoring data with established standards and regulations, and (3) a description of the significant programs and efforts implemented at the site.

Please call me at Extension 6031 if you have any questions.

MJG/ksy
Attachment

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Monticello Mill Tailings Site Environmental Summary

for Calendar Year 1996

November 1997

Prepared by
MACTEC-ERS
Grand Junction, Colorado

Prepared for
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Under DOE Contract No. DE-AC13-96GJ87335

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Abbreviations and Acronyms

BLM	Bureau of Land Management
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	U.S. Code of Federal Regulations
COE	U.S. Army Corps of Engineers
DCG	derived concentration guideline
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
ERA	Ecological Risk Assessment
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
GJO	Grand Junction Office
IWMA	Interim Waste Management Area
MRAP	Monticello Remedial Action Project
NEPA	National Environmental Policy Act
mg/L	milligrams per liter
MMTS	Monticello Mill Tailings Site
mrem	millirems
mrem/yr	millirems per year
µg/L	micrograms per liter
$\mu g/m^3$	micrograms per cubic meter
µmhos/cm	micromhos per centimeter
OU	Operable Unit
PCB	polychlorinated biphenyl
pCi/L	picocuries per liter
pCi/µg	picocuries per microgram
PM_{10}	particulate matter less than or equal to 10 micrometers in diameter
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
RI/FS—EA	Remedial Investigation/Feasibility Study—Environmental Assessment
SARA	Superfund Amendments and Reauthorization Act
SER	Site Environmental Report
SSAB	Site Specific Advisory Board
SWMP	*Special Waste Management Plan for the Monticello Mill Tailings Site and Vicinity Properties*
TDS	total dissolved solids
TLD	thermoluminescent dosimeter
TSCA	Toxic Substances Control Act
UDEQ	Utah Department of Environmental Quality
UPDES	Utah Pollution Discharge Elimination System
UST	underground storage tank
WWTP	Wastewater Treatment Plant

Executive Summary

This Site Environmental Summary presents an update of environmental activities conducted during calendar year 1996 at the Monticello Mill Tailings Site (MMTS) in Monticello, Utah. MACTEC-ERS Inc., the technical assistance and remediation contractor for the U.S. Department of Energy (DOE) Grand Junction Office prepared this report in accordance with the substantive requirements of DOE Order 5400.1, *General Environmental Protection Program*.

Environmental activities conducted at the MMTS during 1996 were associated with remedial action, construction of the on-site repository and haul road, operation of the wastewater treatment plant, collection of baseline risk assessment data, and monitoring of environmental media. Remedial actions included removal of mill tailings, excavation and demolition of millsite foundations, and reconstruction of remediated peripheral properties. Excavation of the repository and installation of the repository liner were completed in November 1996. The repository is located 1 mile south of the Monticello millsite and will contain tailings, byproduct materials, and hazardous substances from the remediation of contaminated properties.

The wastewater treatment plant (WWTP) is designed to treat contaminated surface runoff from the millsite and groundwater encountered during the excavation of contaminated materials. During 1996, the primary focus of activities associated with the WWTP was preparing the plant for full-time operation and treatment. These activities included modifying and repairing the plant, constructing safety upgrades, preparing an operations manual, and conducting operational training. In addition, an activated alumina system was added to the WWTP to enhance the removal of selenium from contaminated water. Contaminated water was treated at the Monticello millsite for a brief period during November and December 1996. Analytical results from the sampling of the influent and effluent during this period are presented in the Compliance Summary section of this report.

The baseline risk assessment initiated in 1994 was continued in 1996 to support the on-going remedial investigation/feasibility study for Operable Unit III. The risk assessment will evaluate human health and ecological risks posed by contaminated sediments, groundwater, and surface water within Operable Unit III. Risk assessment activities included both biotic and abiotic sampling downgradient of the MMTS and in two reference areas. Data collection in support of the ecological risk assessment concluded in 1996.

Radiological and nonradiological monitoring programs at the MMTS included monitoring of atmospheric radon, particulate matter, direct gamma radiation, surface water, and groundwater. Atmospheric radon concentrations measured during 1996 exceeded the EPA standard at two locations along the DOE property boundary and at one location off the DOE property. Concentrations at the remaining off-site locations were below the standard, which is consistent with previous years' analytical results. Maximum airborne concentrations of radium-226, thorium-230, total uranium, and particulate matter less than or equal to 10 micrometers in diameter (PM_{10}) measured in samples from all locations were below EPA standards and the regulatory limits specified by DOE Order 5400.5, *Radiation Protection of the Public and the Environment.*

Average annual gamma radiation measurements exceeded the DOE/EPA standard at two site-boundary locations and one on-site location. Off-site dose modeling for the MMTS was conducted to determine compliance with the DOE/EPA standard of 100 millirems per year (mrem/yr) above background. The dose caused by the summation of radon, air particulates, and direct gamma was 47 mrem/yr above background, which is below the DOE/EPA standard.

Surface water sampling results from an established monitoring network indicated that metals and radionuclides associated with mill tailings generally exceeded background levels in samples collected on and downgradient of the millsite. State of Utah water quality standards for gross alpha, gross beta, lead, and total dissolved solids were exceeded in one or more on-site or downgradient samples collected during 1996.

Federal and State of Utah groundwater quality standards for gross alpha, pH, arsenic, fluoride, molybdenum, total nitrate and nitrite (as nitrogen), radium-226 + 228, selenium, and uranium-234 + 238 were exceeded in one or more on-site and downgradient alluvial monitoring wells. Water quality standards were not exceeded in any upgradient alluvial wells. All upgradient, on-site, cross-gradient, and downgradient Burro Canyon wells, with the exception of downgradient well 95-06, had sample concentrations below Federal and State of Utah groundwater quality standards. Samples from well 95-06 exceeded the gross alpha and uranium-234 + 238 standards.

1.0 Introduction

The Monticello Mill Tailings Site (MMTS), located in San Juan County, Utah, comprises several tracts of land, including the Monticello millsite, the former Bureau of Land Management (BLM) compound, the South Site, and 25 peripheral properties surrounding the millsite (Figure 1). The DOE owns the former three tracts and several of the peripheral properties. Other entities or individuals own the remaining peripheral properties.

Remediation of the MMTS has been divided into three operable units (OUs). OU I consists of the excavation of mill tailings and other hazardous substances from the millsite and their containment in the permanent repository, located on the South Site. OU II consists of the remediation of radioactively contaminated soils, by-product materials, and hazardous substances from private and DOE-owned properties peripheral to the millsite. Collectively, the remedial actions for OU I and OU II are referred to as the Monticello Remedial Action Project (MRAP). Remedial action for OU III addresses contaminated groundwater and surface water on and downgradient of the millsite and contaminated soil and sediment deposited downstream of the millsite.

Consistent with DOE's commitment to public involvement in DOE's operation at the MMTS, DOE maintains an active presence in the local community. A local community relations coordinator regularly attended local Site Specific Advisory Board (SSAB) meetings, city council meetings, chamber of commerce meetings, and other public meetings of importance to MMTS. The Monticello SSAB is an independent forum that can facilitate direct contact between the public, State, and Federal agencies and develop and communicate citizen recommendations. Fact sheets, news releases, display ads, and radio talk shows also provide an opportunity for public information updates, comments, and input. Citizens with questions, comments, or concerns about the project may call a toll-free number (1–800–269–7145) established for San Juan County residents or contact the DOE Site Manager at the Monticello Area Office (801–587–4005) with questions or concerns.

This Site Environmental Summary presents an information update for environmental activities conducted at the MMTS during calendar year 1996. Significant milestones attained in 1996 also are summarized. Environmental monitoring data for calendar year 1996 are presented in the appendix. Background information pertaining to the MMTS and environmental activities conducted during previous years is presented in the *Monticello Mill Tailings Site Environmental Report for Calendar Year 1995* (DOE 1996a) and in previous years' reports.

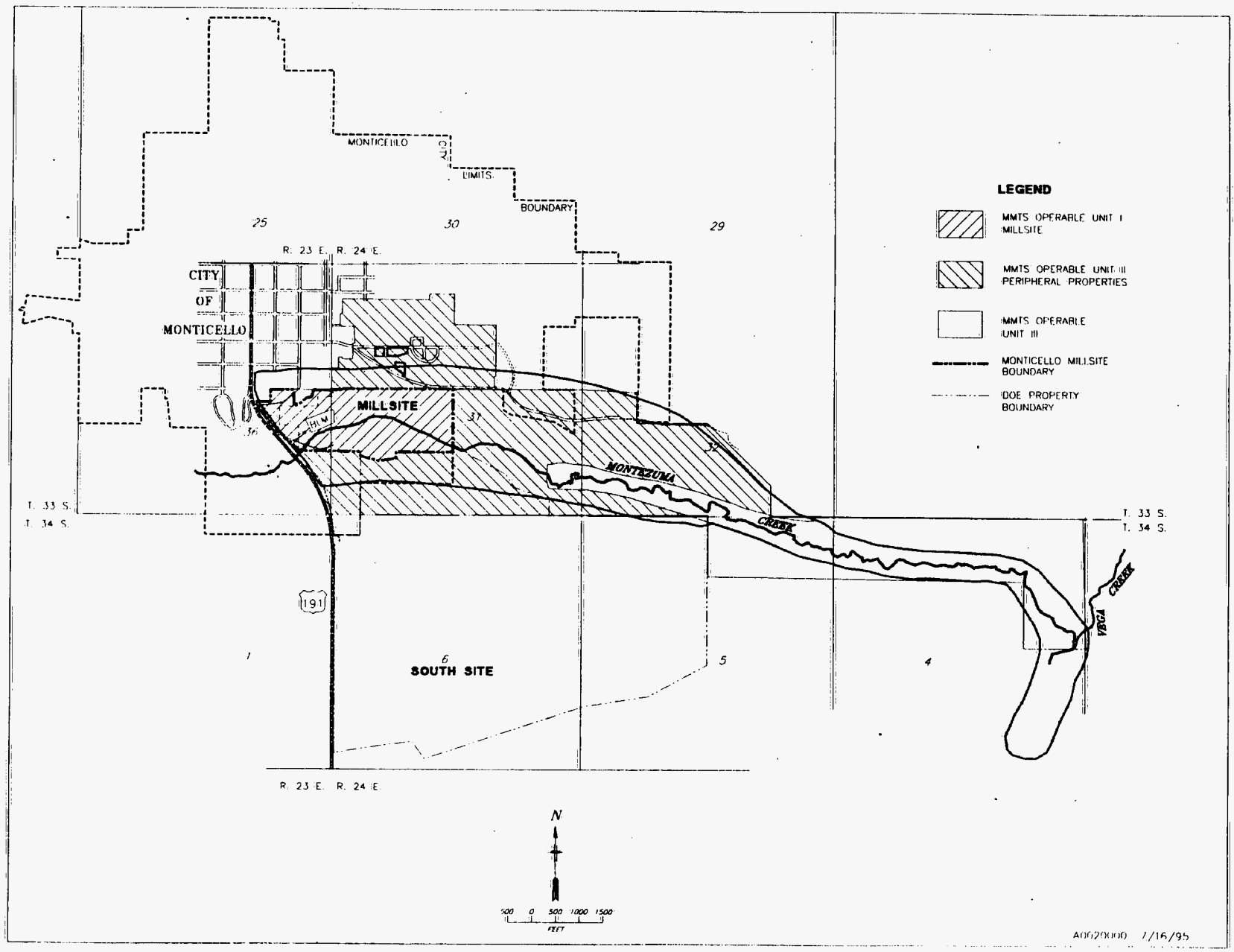

Figure 1. Remedial Action Project Boundary Map, Monticello Mill Tailings Site, San Juan County, Utah

2.0 Compliance Summary

2.1 Compliance Status

The compliance status for the major environmental statutes and Executive Orders applicable to the MMTS is discussed in this section. The compliance status of some of the statutes and executive orders has not changed since preparation of the 1995 SER. The reader should refer to the 1995 SER for the compliance status for these statutes.

2.1.1 Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

Pursuant to Section 120 of CERCLA, a Federal Facility Agreement (FFA) among the DOE, EPA, and the State of Utah became effective December 1988. The FFA establishes performance measures for completing response actions at the MMTS. These performance measures, or milestones, are enforceable by the FFA. The *Monticello Site Management Plan* (DOE 1997a) establishes the overall plan, timetables, deadlines, and schedules for the performance and documentation of discrete tasks and response actions at the MMTS. Table 1 summarizes the 1996 MMTS enforceable milestones. During 1996, DOE met all enforceable milestones established for the MMTS. DOE activities conducted at the MMTS in 1996 were compliant with all applicable CERCLA regulations and requirements.

Table 1. Compliance with CERCLA Enforceable Milestones

Milestone	Completion Date
Submit Conceptual Design for Millsite Restoration - Secondary Document	December 24, 1996
MP-00105 - Design Complete	March 6, 1996
MP-00181 - Design Complete	April 10, 1996
MP-00211 - Design Complete	April 10, 1996
MP-00887 - Design Complete	April 10, 1996
MP-00950, MP-00951, MP-00988, MP-01083, MP-01084 - Design Complete	January 2, 1996
Submit Sampling and Analysis Plan for MP-00990	February 28, 1996
MP-00990 - Design Complete	October 17, 1996

2.1.2 Superfund Amendments and Reauthorization Act, Title III (SARA Title III)

No reportable releases of extremely hazardous substances (identified at 40 CFR 355) or hazardous substances (identified at 40 CFR 302.4) occurred at the MMTS during 1996. Therefore, the emergency notification requirements as defined in Section 304 were not applicable to the MMTS during 1996. Extremely hazardous substances or hazardous chemicals were not present at the MMTS in amounts exceeding the threshold planning quantities established in Sections 311 and 312 of SARA Title III. Storage of diesel fuel in excess of 4,540 kilograms (10,000 pounds) would have necessitated reporting and notification; however, diesel fuel was not stored at the MMTS during 1996 (fuel needed for construction equipment was delivered on a daily basis).

In addition, no toxic chemicals were used at the MMTS in excess of applicable threshold quantities established in Section 313 of SARA Title III. The SARA Title III reporting requirements for calendar year 1996 are summarized as follows:

- Sections 301-303: Emergency Planning - not required
- Section 304: Emergency Notification - not required
- Sections 311-312: Material Safety Data Sheets/Chemical Inventory - not required
- Section 313: Toxic Chemical Release Inventory Reporting - not required

2.1.3 Resource Conservation and Recovery Act (RCRA)

The Utah Hazardous Waste Management Rules are considered applicable or relevant and appropriate when hazardous waste must be managed as part of the remedial action activities. To address the State requirements, as well as Federal requirements under RCRA, DOE prepared the *Special Waste Management Plan for the Monticello Mill Tailings Site and Vicinity Properties* (SWMP) (DOE 1997b). This document presents the DOE's approach for the management of wastes contaminated with hazardous substances other than uranium mill tailings that are encountered during remediation of the MMTS. Additionally, it outlines DOE's approach for the assessment and remediation of hazardous substances and other nonradiological wastes. (However, it does not address surfacewater and groundwater issues associated with the MMTS.) *Guidelines for Managing Suspect Hazardous Substances Encountered During Remediation at the Monticello Mill Tailings Site and Vicinity Properties (Guidelines)*, Attachment 1 of the SWMP, provides field procedures for implementation of the plan. The SWMP was submitted to the EPA and the State of Utah in March 1995. Comments were incorporated and the Draft Final document was resubmitted in November 1995. The plan was updated and resubmitted to the EPA and the State of Utah in March 1997.

Currently, materials that require special management according to the SWMP may be placed into storage at the Interim Waste Management Area (IWMA), located on a secured area of the

millsite. The *Interim Waste Management Area Operating Plan and Procedures* (IWMA OP&P) is incorporated into the SWMP as Attachment 2. The IWMA OP&P describes the management of the IWMA in detail and provides documentation of compliance with substantive requirements of RCRA. Once the on-site repository begins accepting wastes, hazardous wastes may be hauled directly to the on-site repository. The on-site repository will meet the substantive requirements of a RCRA Subtitle C disposal facility.

RCRA wastes that do not meet the waste acceptance criteria for the permanent on-site repository may be treated onsite or transported by a commercial transporter to an off-site treatment, storage, and/or disposal facility for disposal. On-site treatment will be conducted to solidify liquid waste for the purpose of meeting the on-site repository waste acceptance criteria.

2.1.4 National Environmental Policy Act

No changes in the compliance status for this statute have occurred since preparation of the 1995 SER.

2.1.5 Uranium Mill Tailings Radiation Control Act

No changes in the compliance status for this statute have occurred since preparation of the 1995 SER.

2.1.6 Clean Air Act/National Emission Standards for Hazardous Air Pollutants

No changes in the compliance status for these statutes have occurred since preparation of the 1995 SER.

2.1.7 Clean Water Act/National Pollutant Discharge Elimination System

In 1993, DOE submitted a Utah Pollution Discharge Elimination System (UPDES) permit application to the Utah Division of Water Quality, Department of Environmental Quality, for installation of the WWTP (State of Utah, 1992). The WWTP plant was installed in 1995 east of the millsite. The treatment plant treats water in retention Pond 3 to reduce radionuclides, heavy metals, and suspended solids prior to discharge into Montezuma Creek. Specific effluent limitations from the discharge water were proposed by the State of Utah in 1993 and clarified in February 1994.

During 1996, the water level in Pond 3 was low as a result of drought conditions in the Monticello area during the winter of 1995 and the first half of 1996. Consequently, operation of the treatment plant was not required until December 1996, when the plant treated and released approximately 700,000 gallons of water in an 8-day period. This release was conducted to reduce the water level in Pond 3 and to provide for adequate capacity for storm water over the winter.

Influent water and effluent (i.e., treated water) were sampled on three occasions at the WWTP during November and December 1996. A comparison of State water quality standards to the WWTP effluent analyses is presented in Section 2.2.4.

To date, the plant has treated and released approximately 4.7 million gallons into Montezuma Creek. On the basis of waste-loading calculations, all discharges from the WWTP occurring in 1996 were in compliance with effluent guidelines established by the Utah Division of Water Quality, Department of Environmental Quality.

2.1.8 Safe Drinking Water Act

No changes in the compliance status for this statute have occurred since preparation of the 1995 SER.

2.1.9 Toxic Substances Control Act (TSCA)

Asbestos-containing materials were identified at the MMTS in 1994 in several of the buildings located on the former BLM Compound, the former millsite analytical control laboratory, and in suspected steam lines located near the water loading station on MP-00211-VL. Approximately 15 cubic yards of asbestos-containing soil and materials (piping, insulation, floor tiles, etc.) were remediated at the MMTS in October 1996. All asbestos waste material is stored at the Temporary Asbestos Storage Area on the millsite and awaits final disposal in the permanent repository. Asbestos was removed with permit approval from the State of Utah, Division of Air Quality. All work was completed in compliance with the Utah Administrative Code, R446–1–8, Utah Air Conservation Rules (U.A.C. 1991).

Light ballasts removed from three of the BLM Compound buildings (2, 6, and 7) were determined to contain polychlorinated biphenyls (PCBs) on the basis of the August 1957 date stamped on the ballasts. (In compliance with 40 CFR 761, ballasts manufactured prior to 1979 that are not labeled "NO PCBs" must be assumed to contain PCBs). During demolition, the ballasts were removed from the light fixtures, placed into plastic bags, labeled as to building of origin and date of generation, and stored in a 55-gallon open-head drum. Several of the ballasts were noted to be leaking. The drum was placed into an overpack, which served as secondary containment.

The ballast-containing drum within the overpack was transported to the IWMA for storage and placed into a steel structure with a locking, hinged lid in August 1995. (TSCA requirements for container storage of PCB waste are outlined in the SWMP). The overpack and the steel box were marked with the appropriate PCB marking. The ballasts were shipped to an approved high-temperature incineration facility and were destroyed in accordance with 40 CFR 761. After certification as non-radioactive, a second shipment of two PCB ballasts was made to the same facility on July 23, 1996.

2.1.10 Federal Insecticide, Fungicide, and Rodenticide Act

No changes in the compliance status for this statute have occurred since preparation of the 1995 SER (pesticides were not used on the MMTS in 1996).

2.1.11 Endangered Species Act

An updated list of Federal endangered and threatened species was obtained from the U.S. Fish and Wildlife Service (FWS). Only one of the listed species, the southwestern willow flycatcher (*Empidonax traillii extimus*), was suspected to occur, inhabit, or visit areas within OUs I, II, or III. DOE conducted a survey for this species in May and June 1996 in accordance with FWS protocol; no southwestern willow flycatchers were found.

An updated list of State-sensitive species was obtained from the Utah Division of Wildlife Resources. Two of the listed species, the northern goshawk (*Accipiter gentilis*) and spotted bat (*Euderma maculatum*), may occur in the OU III area. Protection of these species will be considered in the remedial design if remediation is conducted in OU III.

2.1.12 National Historic Preservation Act/Archeological Resources Protection Act

A final report of the mitigation of site 42SA21063, a multi-component prehistoric campsite, was completed in May 1996. Because of possible effects of haul road construction on the site, a program of archaeological data recovery was conducted, which included systematic surface artifact collection, augering and test excavation to identify areas having high potential for important cultural deposits, and controlled excavation of extensive blocks. Five archaeological components—Paleoindian, Middle Archaic, Terminal Archaic, Formative, and Ute—were identified, all restricted to the uppermost 15 cm of soil. Archival and cultural materials collected during site excavation were submitted to the Edge of the Cedars State Park in Blanding, Utah, for curation (Accession Number ECPR-96010).

Buried human remains of probable prehistoric origin (first encountered during construction activities on the millsite in 1995) were exhumed and reburied. Consultation with the Hopi Tribe about discovery, exhumation, and ultimate disposition of the remains was officially opened by DOE in February 1996. (The assumption of a Native American origin for the remains was based on the presence of prehistoric ceramics.) Exhumation, nondestructive descriptive field analyses, and reburial were performed in September 1996. Reburial of the remains was conducted at a nearby location (site 42SA23129) on DOE property in accordance with stipulations of the Hopi Tribe. A final report of the activity was completed in October 1996.

2.1.13 Executive Order 11988, "Floodplain Management"

No changes relevant to Floodplain Management for Montezuma Creek occurred in calendar year 1996. Adverse impacts associated with direct and indirect development of the floodplain are evaluated for each remedial design prepared.

2.1.14 Executive Order 11990, "Protection of Wetlands"

In 1989, the U.S. Army Corps of Engineers (COE) determined that wetland areas exist on the MMTS. DOE submitted the design drawings of OU I, Phase I, to EPA in March 1992 to notify EPA of planned wetland disturbances. Until 1996, wetland restoration was accomplished on a site-specific basis. In March 1996, the *Monticello Wetlands Master Plan* (Master Plan) (DOE 1995d) was submitted to EPA and the State. The Master Plan provides guidelines for mitigation of all disturbed MMTS wetland areas. Mitigation plans previously submitted to EPA and/or the State are not included in the Master Plan. Goals of the Master Plan ensure that (1) CERCLA cleanup activities comply with applicable wetlands regulations and guidance; (2) adverse effects to wetland areas are avoided where possible; (3) unavoidable adverse effects to wetland areas are minimized; and (4) adverse effects to wetland areas are mitigated. The Master Plan provides delineation results, mitigation measures, and monitoring plans for disturbed wetland areas at the MMTS.

Wetland areas at the MMTS total 11.5 hectares (28.5 acres). Excluding OU III, only 3.1 hectares (7.6 acres) of wetland areas have been or will be affected by remedial activities. Wetland types in Monticello include: perennial streams, intermittent streams, emergent wetlands, depression wetlands, and stock ponds. Wetland areas will be restored in situ where possible; otherwise they will be re-created at the millsite (except for one small wetland area adjacent to the haul road that was re-created on an adjacent DOE-owned property). Restoration efforts include restoration of size and function of wetland areas, minimization of erosion, prevention of weed encroachment, and use of ecotype plant species. The seed will be collected locally when possible. Re-created wetland areas will be monitored for a minimum of 3 years until success criteria are achieved.

The *First Annual Monitoring Report for Monticello Wetlands* (DOE 1996c) was submitted to EPA and the State in December 1996. Three completed wetland areas were monitored in 1996 in accordance with the Master Plan. Third-year monitoring data for wetland area "MS-00184-VL Pond" exceeded the final success criteria with a vegetative cover of 96 percent. First year monitoring was conducted on two properties completed in 1995: "MP-00178-RS Phase IIA Central Tract" and MS-01041-VL Edge of Pond." First year success criteria were met for the former but not for the latter (probably a result of the drought). Additional planting will be done if the Edge of Pond wetland area does not approach second-year success criteria in 1997. Undisturbed emergent, stock pond, and perennial stream wetlands were also sampled for baseline measurements in 1996. The baseline data is used to establish success criteria.

Also in 1996, five remediated properties were investigated for potential past disturbance to wetland areas. Of the five, only "MP-00178-RS Phase II Pehrson 1" may have been affected

along the edge. To insure that all possible effects are mitigated, the maximum possible disturbed acreage (1,300 square feet) will be re-created on the millsite. During monitoring activities, an area of new seeps was discovered south of the Monticello cemetery. The new seeps will be monitored to determine whether they are expected to become wetlands.

2.1.15 State of Utah Groundwater Quality Protection Regulations

No changes in the compliance status for this statute have occurred since preparation of the 1995 SER. Concentrations of samples collected from downgradient Burro Canyon well 95-06 exceeded Federal standards for gross alpha and uranium-234 + 238. This well was installed in January 1996.

2.1.16 Title 73, "Water and Irrigation," Utah Code Annotated

No changes in the compliance status for this statute have occurred since preparation of the 1995 SER.

2.2 Environmental Issues and Actions

2.2.1 Suspect Hazardous Substances

The process for managing suspect CERCLA hazardous substances discovered before or during remediation is identified in the SWMP (DOE 1997). This document addresses the procedures for identifying and characterizing suspect hazardous substances and the processes for remediating and verifying hazardous substances. It also addresses waste management issues.

During 1996, activities associated with suspect hazardous substances included preparation and submittal of the *Site Characterization Report for Monticello Peripheral Properties MP-00181-OT, Phases IV and IVA, and MP-00211-VL, Phases I and II* (DOE 1996b) to the regulatory agencies in January 1996. Additionally, suspect hazardous substances were identified on several peripheral properties and on the millsite during remediation, triggering the use of the management process prescribed in the SWMP.

2.2.2 Underground Storage Tanks

DOE permanently closed four underground storage tanks (USTs) on the MMTS during 1995 in accordance with the applicable State of Utah UST Rules. DOE was notified by the State of Utah's Executive Secretary of the Division of Environmental Response and Remediation, UST Section, on January 8, 1996, that the low levels of petroleum contamination at the site complied with the Utah UST requirements and that no further corrective action was required. Further corrective action would only be required if a change in land use or other evidence of contamination from the facility was indicated.

In October 1996, an UST was unexpectedly encountered on peripheral property MP-00211-VL. The UST, which was previously used to store diesel fuel, will be permanently closed in accordance with the applicable state of Utah UST Rules during the 1997 construction season.

2.2.3 Repository Construction

DOE reconfirmed the decision to construct a repository on 80 acres of DOE-owned land south of the millsite in December 1994 (see Figure 13). The favorable hydrogeologic setting, as well as the design features of the repository, will ensure that the site is protective of human health and the environment. Design for the repository was finalized in August 1995, and the construction subcontract was awarded in September 1995. Repository construction was initiated in November 1995 and is currently in progress.

Excavation of the repository and installation of the repository liner were completed in November 1996. The repository is designed to contain 2.6 million cubic yards of contaminated material. A multi-layer cover that includes a radon barrier and vegetated cover will be constructed after placement of contaminated materials is complete. Facilities associated with the operation of the repository include runoff-control ditches, sediment ponds, soil stockpiles, Pond 4 (used to contain water removed from the repository leachate collection and leak detection systems), and a support area that contains office trailers, lunchrooms, restrooms, and other administrative facilities.

2.2.4 Wastewater Treatment Plant

The WWTP is designed to remove heavy metals and radionuclides from groundwater and surface wastewaters at an average flow rate of 60 gallons per minute. The plant equipment is housed in three, 48-foot trailers.

The wastewater treatment system employed at the MMTS encompasses all three of the classic treatment processes: primary treatment, secondary treatment, and advanced or tertiary treatment. The primary treatment system consists of the collection pond (Retention Pond 3) located downgradient of the tailings storage areas. Secondary treatment is provided by Trailers 1 and 2. Tertiary treatment is provided by Trailer 3. Trailers 1 and 2 are currently operational. Trailer 3, housing the tertiary treatment, was upgraded in 1996 to use activated alumina to remove selenium from the water.

During tailings excavation, surface and sub-surface waters are collected and routed to Pond 3 prior to treatment by the WWTP. Wastewaters from various areas of the MMTS are collected and mixed in Pond 3 so that the water influent to the WWTP meets the influent water qualityrequirements of the plant specifications. Larger sediment particles settle to the bottom of Pond 3, thus providing primary treatment. This sediment will be removed from the pond and placed in the on-site repository when the pond is decommissioned at the end of the project.

To meet the discharge effluent criteria, secondary treatment processes are employed to treat the contaminated solids in the wastewater solution. The secondary treatment system includes chemical precipitation, sedimentation, and membrane filtration. Trailer 2 contains the chemical precipitation process. The process involves addition of various chemicals to convert the solids in solution to a colloidal suspension prior to filtration. The membrane filtration system in Trailer 2 then filters the solids from the wastewater, producing a clean filtrate that can be discharged to the receiving waters. To verify that the discharge criteria established by the UDEQ, Division of Water Quality are met, water samples are collected and analyzed. If the filtrate produced by the secondary treatment does not meet the regulatory discharge criteria for one or more of the analytes, the tertiary treatment must be employed.

The tertiary treatment consists of ion-exchange, adsorption, and filtration media with 60-mesh or larger filters. Choice of the appropriate media is dependent on the analyte to be removed and the specific chemistry of the influent. As in the case of the secondary treatment system, samples are collected from the discharged water to verify that the State discharge criteria are met.

OHM Remediation Services took over operation of the WWTP in September 1996. Training revisions of the WWTP Operations and Maintenance Manual, WWTP modifications, and maintenance occurred throughout most of 1996. The WWTP was operated in the recirculation mode in November 1996 for operator training and did not discharge to Montezuma Creek. Because of the below-normal precipitation in the winter of 1995/1996 and through June of 1996, water levels in Retention Pond 3 were low, and treatment was not required; however, precipitation increased during the remainder of the year. Treatment and discharge of water to Montezuma Creek occurred for 8 days in December 1996 to reduce Retention Pond 3 water levels so that adequate capacity for storm water would be provided during the winter. Influent and Effluent Data for samples collected in December 1996 at the WWTP are presented in Tables 2 and 3 respectively. The discharges to Montezuma Creek in December 1996 met the maximum concentration limits for all pollutants. The discharges met all of the 30-day average limits except for those of selenium. Selenium levels were slightly elevated above the 30-day average limit during the 8 days of discharge. During the 8 days, the plant discharged a total of 697,795 gallons at an average flow rate of 61 gallons per minute. The plant operator did not use the activated alumina process during this period, and therefore, selenium removal occurred.

Table 2. Influent Results for December 1996

Parameter	Maximum Effluent Concentration Limit	30-day Average Concentration Limit	Practical Quantitation Limit	Sample Date 11/25/96 (Not Discharged)		Sample Date 12/16/96		Sample Date 12/19/96	
TSS (mg/L)	30	20	10	NP[4]	U[1]	NP	U	NP	
BOD (mg/L)	35	25	2	U	U	NP	U	NP	
COD (mg/L)	200	100	5	NP	16	NP	18	NP	
Total Radium-226 (pCi/L)	5	NA	0.4	NP	0.3	0.1	0	NP	
Dissolved Radium-226 (pCi/L)	NA	3	0.4	NP	0.1	0	0	NP	
Uranium (mg/L)	4	2	0.0004	NP	0.0021	NP	0.0029	NP	
Total Zinc (mg/L)	0.34	0.31	0.02	U	U	NP	U	NP	U
Ammonia as N (mg/L)	5.6	3.9	0.1	NP	U	NP	U	NP	
Gross Alpha (pCi/L)	50	NA	10	NP	0.0	NP	9.7	NP	
Total Arsenic (mg/L)	0.05	0.01	0.003	U	U	NP	U	U	U
Total Mercury (mg/L)	0.0024	0.00002	0.0002	U	U	NP	U	U	U
Iron (mg/L)	1	NA	0.1	U	U	NP	U	U	U
Total Lead (mg/L)	0.05	0.016	0.002	U	U	NP	U	U	0.002
Total Selenium (mg/L)	0.020	0.012	0.005	0.14	0.14	0.18	0.16	0.18	0.17
Total Silver (mg/L)	0.035	0.00012	0.005	U	U	NP	U	U	U
Oil and Grease (mg/L)	10	NA	1	Not Analyzed[2]		NP	U	NP	
pH	NA	6.5 - 9.0	NA	Not Available[3]		NP	7.31	NP	
Nitrate as N (mg/L)	10	5	0.1	NP	U	NP	0.3	NP	
TDS (mg/L)	3000	1500	10	NP	612	NP	842	NP	

[1] U=Undetected
[2] Oil and Grease sample was not analyzed by the laboratory due to analytical problems.
[3] pH not reported by OHM.
[4] NP=Test Not Performed

Table 3. Effluent Results For December 1996

Parameter	Maximum Allowable Pond 3 Concentration	Practical Quantitation Limit	Sample Date 11/25/96		Sample Date 12/16/96		Sample Date 12/19/96
TSS (mg/L)	130	10	NP[5]	U[1]	NP	U	Test Not Performed[4]
BOD (mg/L)	25	2	U	U	U	U	
COD (mg/L)	100	5	NP	23	NP	25	
Total Radium-226 (pCi/L)	56	0.4	6.5	5.1	16	9.5	
Dissolved Radium-226 (pCi/L)	33	0.4	NP	5.9	4.3	15	
Uranium (mg/L)	20	0.0004	NP	0.19	NP	0.17	
Total Zinc (mg/L)	5	0.02	U	U	U	U	
Ammonia as N (mg/L)	3.9	0.1	NP	U	NP	U	
Gross Alpha (pCi/L)	1000	10	NP	112	NP	139	
Total Arsenic (mg/L)	0.2	0.003	0.007	0.012	0.011	0.011	
Total Mercury (mg/L)	0.00002	0.0002	U	U	U	U	
Iron (mg/L)	15	0.1	U	U	0.4	0.3	
Total Lead (mg/L)	0.16	0.002	U	U	U	U	
Total Selenium (mg/L)	0.048	0.005	0.16	0.17	0.16	0.18	
Total Silver (mg/L)	0.0024	0.005	U	U	U	U	
Oil and Grease (mg/L)	10	1	Not Analyzed[2]		NP	U	
pH	NA	NA	Not Available[3]		NP	8.84	
Nitrate as N (mg/L)	5	0.1	NP	0.1	NP	0.3	
TDS (mg/L)	1250	10	NP	678	NP	786	

[1] U=Undetected
[2] Oil and Grease sample was not analyzed by the laboaratory due to analytical problems.
[3] pH not reported by OHM.
[4] Influent was not sampled on 12/19/96.
[5] NP=Test Not Performed

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3.0 Environmental Monitoring Summary

Historical environmental monitoring information, sampling techniques, and regulatory guidance pertaining to environmental monitoring are presented in the 1994 and 1995 SER. Environmental monitoring data collected during 1996 are presented in this section.

3.1 Atmospheric Radon

Radon concentration was measured at 25 locations during 1996 (Figure 2) with Landauer Radtrak alpha-sensitive detectors. As in previous years, the detectors were exposed in duplicate 1 meter (3.28 feet) above the ground surface and were analyzed quarterly (3-month exposure).

The site-specific standard of 0.8 picocuries per liter (pCi/L) was calculated by adding the EPA standard (40 CFR 192) of 0.5 pCi/L (annual average) to the natural background concentration of 0.3 pCi/L. As shown in Table 4, the atmospheric radon concentrations measured during 1996 exceeded the EPA standard at two locations along the DOE property boundary and at one location (RN–M–04) off the DOE property. It is expected that when the tailings have been removed from the present location and placed in the long-term storage cell that all radon sampling locations exceeding the standard will return to background levels. Concentrations at the remaining off-site locations were below the standard, which is consistent with previous years' analytical results. Quarterly data collected at each location are listed in the appendix, Tables A–1 through A–4.

3.2 Air Particulates

The 1996 air sampling network consisted of: (1) five high-volume air samplers that sample ambient air at approximately 1.13 cubic meter per minute (m^3/min) for 24 hours every sixth day for particulate matter less than or equal to 10 micrometers in diameter (PM_{10}); and (2) six low-volume (flow rate of 0.06 m^3/min) air samplers adjacent to the millsite and the city of Monticello that sample radioparticulates (radium-226, thorium-230, polonium-210, and total uranium). Figure 3 depicts the locations of the air particulate samplers at and near the MMTS that provide on-site, off-site, and background data for air particulates.

Table 5 compares measured PM_{10} concentrations to EPA standards. Acceptable levels of PM_{10} are defined in the National Ambient Air Quality Standards (40 CFR 50), which specify a maximum annual average of 50 micrograms per cubic meter ($\mu g/m^3$) and a 24-hour maximum concentration of 150 $\mu g/m^3$. During 1996, the maximum annual average and 24-hour maximum concentrations of PM_{10} measured at all sampling locations were well below EPA standards.

The annual average concentration of PM_{10} measured at the four samplers surrounding the millsite was 13.7 $\mu g/m^3$, and the average 24-hour maximum concentration measured at these samplers was 31.6 $\mu g/m^3$. Background concentrations measured at AIR–M–7 were 9.5 $\mu g/m^3$ (annual average) and 23.8 $\mu g/m^3$ (maximum concentration). The higher PM_{10} concentrations near the

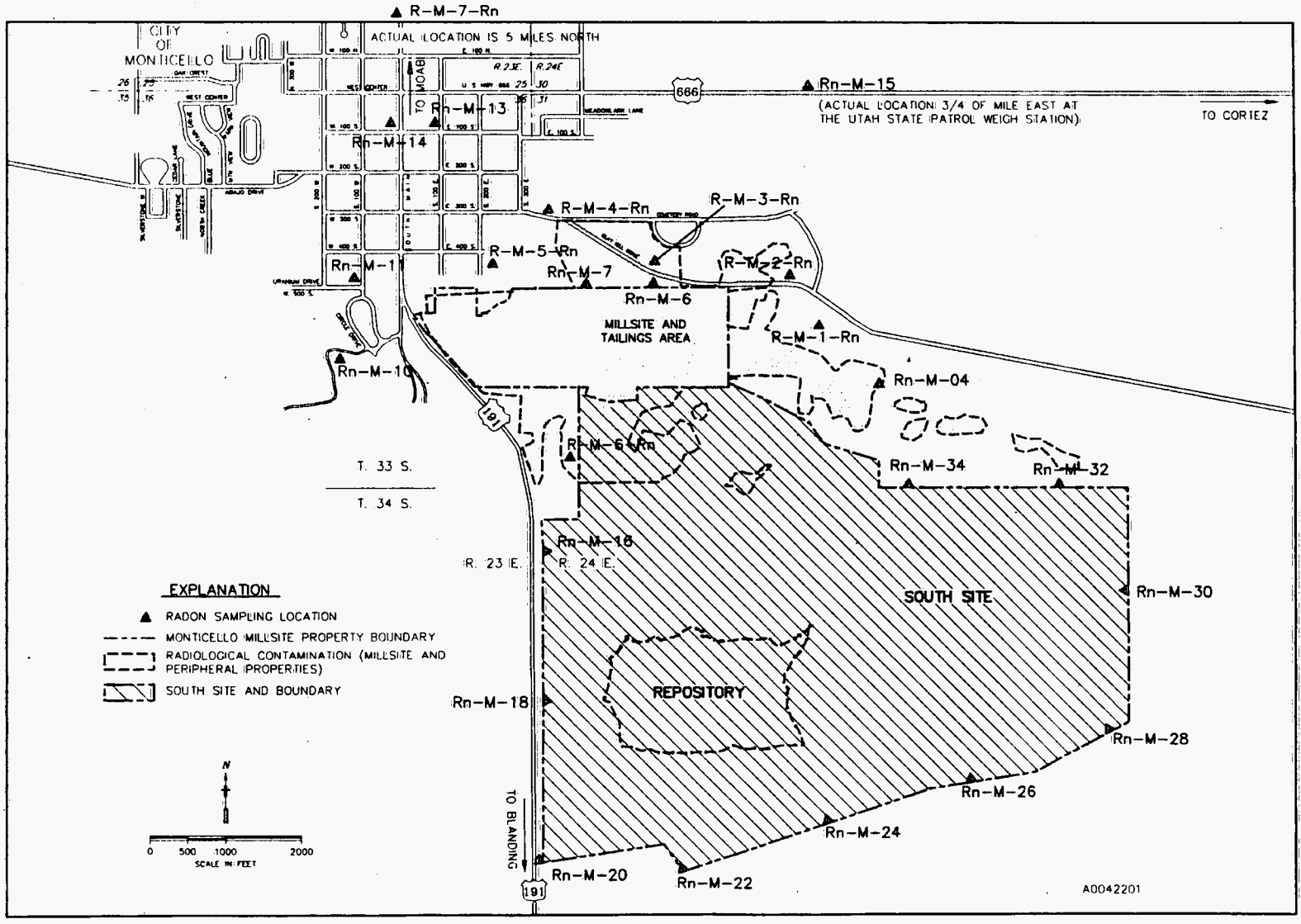

Figure 2. Atmospheric Radon Monitoring Locations At and Near MMTS

Table 4. Comparison of Average Annual Radon Concentrations At and Near MMTS with EPA Standard During 1996

Sampling Location	Radon Concentration	
	Annual Average (pCi/L) [a]	EPA Standard (Including background) (pCi/L)
On Site		
RN-M-06	1.1	0.8
RN-M-07	4.6	0.8
RN-M-16	0.5	0.8
RN-M-18	0.6	0.8
RN-M-20	0.4	0.8
RN-M-22	0.5	0.8
RN-M-24	0.6	0.8
RN-M-26	0.6	0.8
RN-M-28	0.7	0.8
RN-M-30	0.7	0.8
RN-M-32	0.7	0.8
RN-M-34	0.5	0.8
Off Site		
R-M-1-RN	0.5	0.8
R-M-2-RN	0.5	0.8
R-M-3-RN	0.8	0.8
R-M-4-RN	0.4	0.8
R-M-5-RN	0.6	0.8
R-M-6-RN	0.5	0.8
R-M-7-RN	0.3	0.8
RN-M-04	1.1	0.8
RN-M-10	0.4	0.8
RN-M-11	0.3	0.8
RN-M-13	0.4	0.8
RN-M-14	0.3	0.8
RN-M-15	0.4	0.8

[a] 1 pCi/L = 3.7×10^{-2} becquerels per liter.

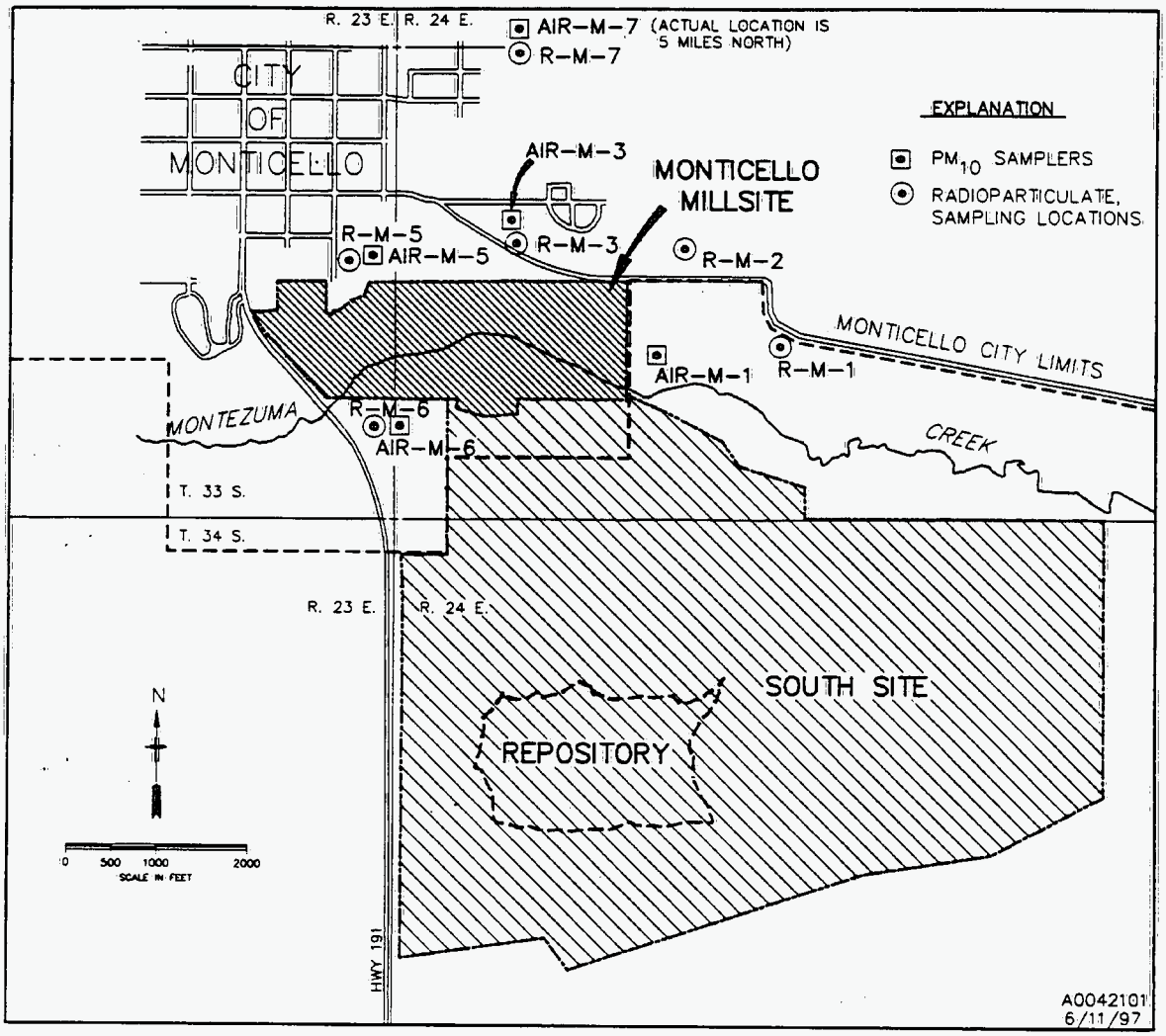

Figure 3. Air Particulate Sampling Locations At and Near MMTS

Table 5. Results of MMTS PM_{10} Monitoring Conducted During 1996

Station		Measured PM_{10} [a] ($\mu g/m^3$)	EPA Standards ($\mu g/m^3$)
AIR-M-1	Maximum	41	150
	Average	16	50
	Count	42	
AIR-M-3	Maximum	27.7	150
	Average	14.2	50
	Count	37	
AIR-M-5	Maximum	33	150
	Average	14.6	50
	Count	32	
AIR-M-6	Maximum	24.6	150
	Average	9.9	50
	Count	41	
AIR-M-7	Maximum	23.8	150
	Average	9.5	50
	Count	42	

[a] The numbers given in this table are defined as follows:
Maximum - Maximum concentration observed in sample period.
Average - Annual average concentration.
Count - Number of samples collected.

millsite were probably caused by fugitive dust from remedial activities on the millsite, construction of the repository, vehicular traffic on unpaved roads, and dirt from streets in and around Monticello. Results of PM_{10} analyses for individual stations are listed in the appendix, Tables A–5 through A–9.

Table 6 compares 1996 maximum and average radioparticulate concentrations with DOE derived concentration guidelines (DCGs). A DCG represents the concentration that would cause a member of the public, residing at the point of collection, to receive a dose of 100 mrem/yr from a specified radionuclide. Exposures above this limit are considered unacceptable. All measured concentrations of radium-226, thorium-230, polonium-210, and total uranium were two to four orders of magnitude below the respective DCGs. Results of individual analyses are listed in the appendix, Table A–10.

Table 6. Results of MMTS Radioparticulate Monitoring Conducted During 1996[a]

		Radiological Elements					
		Radium-226 (μCi/mL)[b]	Polonium-210 (μCi/mL)[b]	Thorium-230 (μCi/mL)[b]	Thorium-230 (pg/mL)[c]	Uranium (pg/mL)	Uranium (μCi/mL)[b,d]
	DCG	1.0E-12	1.0E-12	4.0E-14	No Standard	No Standard	2.0E-12
Station							
	Maximum[e]	4.5E-16	4.9E-15	2.9E-16	1.5E-08	~4.6E-04	~3.2E-16
R-M-1-AIR	Average	2.6E-16	2.9E-15	1.5E-16	7.7E-09	3.4E-04	2.3E-16
	Count	9 (8)	9 (9)	9 (9)	9 (9)	9 (9)	9 (9)
	Maximum	7.0E-16	4.2E-15	1.6E-16	8.2E-09	~4.5E-04	~3.1E-16
R-M-2-AIR	Average	3.1E-16	2.3E-15	1.1E-16	5.7E-09	3.3E-04	2.3E-16
	Count	9 (9)	9 (9)	9 (9)	9 (9)	9 (9)	9 (9)
	Maximum	4.2E-16	3.4E-15	1.6E-16	8.2E-09	~3.5E-04	~2.4E-16
R-M-3-AIR	Average	2.0E-16	2.2E-15	1.2E-16	6.2E-09	3.0E-04	2.1E-16
	Count	9 (8)	9 (9)	9 (9)	9 (9)	9 (9)	9 (9)
	Maximum	3.5E-16	4.2E-15	1.5E-16	7.7E-09	~4.3E-04	~3.0E-16
R-M-5-AIR	Average	2.0E-16	2.4E-15	1.3E-16	6.7E-09	3.1E-04	2.1E-16
	Count	7 (7)	7 (7)	7 (6)	7 (6)	7 (7)	7 (7)
	Maximum	3.6E-16	3.9E-15	1.5E-16	7.7E-09	~3.3E-04	~2.3E-16
R-M-6-AIR	Average	2.0E-16	2.4E-15	1.1E-16	5.7E-09	2.7E-04	1.9E-16
	Count	9 (6)	9 (9)	9 (8)	9 (8)	9 (9)	9 (9)
	Maximum	6.4E-16	4.2E-15	1.4E-16	7.2E-09	~3.1E-04	~2.1E-16
R-M-7-AIR	Average	2.1E-16	2.6E-15	1.0E-16	5.2E-09	2.6E-04	1.8E-16
	Count	9 (8)	9 (9)	9 (8)	9 (8)	9 (9)	9 (9)

[a] A "~" indicates an approximate value (the value was outside the limits for which the instrument was calibrated). Scientific notation E-15 = "x 10^{-15}."

[b] 1 microcurie per milliliter (μCi/mL) = 3.7 x 10^{4} becquerels per milliter.

[c] pg/mL = picograms per milliliter. The conversion of thorium-230 concentrations between microcuries and picograms assumes equilibrium and an activity of 0.0194 μCi/μg.

[d] The conversion of uranium concentrations between microcuries and picograms assumes equilibrium and an activity of 0.687 pCi/μg.

[e] The numbers given in this table are defined as follows:
Maximum - Maximum concentration observed in sample period.
Average - Annual average concentration. Only samples above detection limit are used in calculation.
Count - Number of samples collected. The number in parentheses indicates the number of samples having concentrations above the detection limit.

3.3 Direct Gamma Radiation Monitoring

Environmental radiation monitoring is conducted to assess the potential gamma radiation dose to persons on and near the millsite. Gamma radiation measurements are included, along with radiation measurements associated with radon and air particulates, in the calculation of total off-site dose to the public to determine compliance with the DOE/EPA standard of 100 mrem/yr above background (see Section 3.4, Off-Site Dose Modeling).

During 1996, 25 monitoring locations (Figure 4) on the DOE property line and surrounding areas were monitored quarterly using $CaSO_4$:Dy (calcium sulfate: dysprosium) thermoluminescent dosimeters (TLDs). Results of the monitoring are presented in the appendix, Tables A–13 through A–14 and are summarized in Table 7. The background level of gamma radiation of 93 mrem/yr was measured at station R–M–7–TLD. Two DOE property-line locations yielded annual average measurements greater than the standard; annual averages of measurements collected off the millsite were below the standard. Levels of gamma radiation at the DOE boundary are expected to decrease to background levels after remediation is completed.

3.4 Off-Site Dose Modeling

Monitoring data collected during 1996 were used to calculate the effective dose equivalent (EDE) to the maximally exposed off-site individual near the MMTS. Calculation of the EDE of the maximally exposed off-site individual living approximately 100 meters (328 feet) north of the site boundary involved summing the radon, air particulate, and gamma source terms at this location. The dose caused by these sources was 17 mrem/yr from radon and 30 mrem/yr from gamma radiation. The dose resulting from radioparticulate emissions was indistinguishable from background concentrations. Summing these sources results in a total dose of 47 mrem/yr (0.47 millisievert per year) above background, which is below the DOE/EPA standard of 100 mrem/year above background.

As required by DOE Order 5400.5, the collective population dose was calculated. The dose assessment model CAP88PC predicted that the collective dose to persons residing within an 80-kilometer (50-mile) radius of the MMTS was 23.84 person-rem per year (0.24 person-sievert per year). Because a reliable source term for radionuclides could not be derived, it was not included in the population dose estimate. However, on the basis of ambient air radionuclide concentrations measured at the site (see Table 6 in this report), the population dose from DOE-caused radionuclide emissions was expected to be minimal. The population file used in the dose modeling was compiled from 1990 U.S. Bureau of Census data; the meteorological data file was derived from meteorological data collected at the MMTS during 1996.

3.5 Meteorology

Meteorological monitoring was conducted during 1996 at a location approximately 200 meters southwest from the repository (Figure 4). Parameters measured or calculated included wind speed, wind direction, standard deviation of wind direction, temperature, barometric pressure,

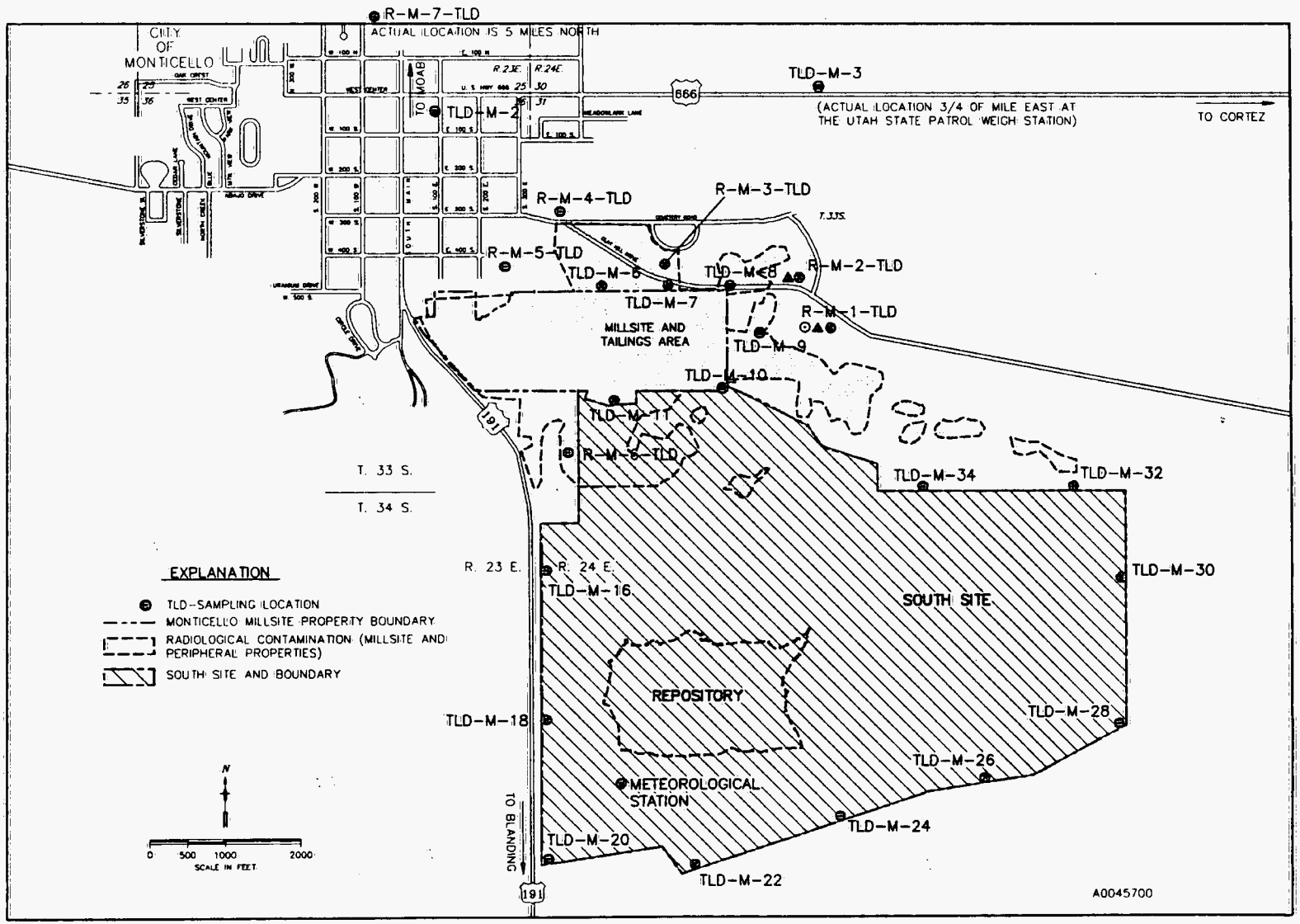

Figure 4. Direct Gamma Radiation and Meteorological Monitoring Locations At and Near MMTS

Table 7. Average Annual Gamma Exposure Rates At and Near MMTS During 1996

Sampling Location	Gamma Exposure	
	Annual Average (mrem/yr) [a]	DOE Standard (mrem/yr) [b]
On Site		
TLD-M-06	653	193
TLD-M-07	143	193
TLD-M-08	104	193
TLD-M-09	117	193
TLD-M-10	127	193
TLD-M-11	216	193
TLD-M-16	107	193
TLD-M-18	119	193
TLD-M-20	108	193
TLD-M-22	110	193
TLD-M-24	118	193
TLD-M-26	115	193
TLD-M-28	115	193
TLD-M-30	109	193
TLD-M-32	110	193
TLD-M-34	116	193
Off Site		
R-M-1-TLD	108	193
R-M-2-TLD	108	193
R-M-3-TLD	118	193
R-M-4-TLD	128	193
R-M-5-TLD	124	193
R-M-6-TLD	100	193
R-M-7-TLD	89	193
TLD-M-02	111	193
TLD-M-03	107	193

[a] 1 mrem/yr = .01 millisieverts per year.
[b] Standard includes background of 89 mrem/yr.

precipitation, solar radiation, and relative humidity. Table 8 summarizes 1996 weather data for temperature, wind speed, and precipitation.

Table 8. 1996 Weather Data Summary for the MMTS

Month	Temperature C° (F°)[a]				Wind Speed KPH (MPH)[b]		Precipitation Totals cm (in.)[c]
	Avg. High	Avg. Low	Max. Temp.	Min. Temp.	Avg.	Peak Gust	
January	4.2 (39.6)	-7.3 (18.9)	12.7 (54.9)	-15.7 (3.7)	20.9 (13.0)	76.1 (47.3)	0.71 (0.28)
February	9.3 (48.7)	-4.4 (24.1)	17.8 (64.1)	-15.2 (4.6)	16.3 (10.1)	72.0 (44.7)	2.39 (0.94)
March	11.4 (52.5)	-3.1 (26.4)	18.2 (64.7)	-9.7 (14.5)	18.5 (11.5)	76.3 (47.4)	2.59 (1.02)
April	15.6 (60.1)	0.7 (33.2)	24.3 (75.7)	-7.3 (18.9)	19.6 (12.2)	74.7 (46.4)	2.29 (0.90)
May	23.9 (75.1)	7.3 (45.1)	32.2 (90.0)	-1.3 (29.6)	18.0 (11.2)	67.0 (41.6)	1.60 (0.63)
June	28.4 (83.1)	12.0 (53.7)	33.7 (92.7)	7.4 (45.4)	16.9 (10.5)	75.3 (46.8)	4.29 (1.69)
July	32.0 (89.6)	15.7 (60.2)	34.6 (94.3)	9.6 (49.3)	15.1 (9.4)	76.3 (47.4)	8.58 (3.38)
August	29.9 (85.9)	(14.3) (57.8)	36.1 (97.0)	9.6 (49.2)	15.1 (9.4)	66.5 (41.3)	3.61 (1.42)
September	21.3 (70.4)	7.0 (44.6)	29.9 (85.9)	-4.0 (24.9)	15.0 (9.3)	73.9 (45.9)	12.09 (4.76)
October	15.0 (59.1)	1.8 (35.3)	26.2 (79.1)	-10.0 (14.0)	15.6 (9.7)	69.7 (43.3)	13.28 (5.23)
November	8.0 (46.4)	-2.6 (27.4)	17.4 (63.4)	-9.2 (15.5)	17.7 (11.0)	72.3 (44.9)	3.99 (1.57)
December	3.2 (37.8)	-7.0 (19.4)	9.8 (49.6)	-17.6 (0.3)	19.8 (12.3)	74.5 (46.3)	1.60 (0.63)

[a] C° = degrees Centigrade; F° = degrees Fahrenheit
[b] KPH = kilometers per hour; MPH = miles per hour
[c] cm = centimeters; in. = inches

3.6 Surface Water

Montezuma Creek is the primary surface water body in the MMTS area, flowing west to east through the center of the millsite. Typical flow rates are on the order of 1 to 2 cubic feet per second. Flow is generally perennial; however, portions of the creek are seasonally dry some years. Montezuma Creek water is diverted about 1 mile upstream of the millsite for crop irrigation. Downstream of the millsite, creek water is also used for crop irrigation and livestock watering. Other surface water bodies in the MMTS area include several artificial ponds and groundwater seeps.

The 1996 surface water monitoring program at the MMTS involved a continuation of the OU III Remedial Investigation (RI) through the June sampling event. The objectives of the RI were (1) to compare upstream water quality conditions within Montezuma Creek with conditions on and downstream of the millsite, (2) to characterize the type and extent of contamination in surface water, and (3) to verify compliance with State surface water quality standards. After the June sampling event, the RI was completed, and surface water sampling frequency was reduced to an annual basis until remediation of the millsite commences.

In accordance with the above stated objectives, surface water samples were collected from the locations listed in Table 9. Sampling locations included an established network on Montezuma Creek upstream of the millsite, on the millsite, and downstream of the millsite. In addition, samples were collected from Montezuma Creek along sampling transects during RI soil and sediment sampling; sampling locations are shown in Figures 5, 6, and 7.

Surface water samples collected during 1996 were submitted for laboratory analysis for the constituents listed in Table 9. Alkalinity, pH, electrical conductivity, and temperature were measured in the field at the time of sample collection. The analytical results are displayed in Table A–17 of the appendix. All surface water samples were collected and analyzed according to standardized, approved methods described in the *Draft Final Monticello Mill Tailings Site Operable Unit III Remedial Investigation/Feasibility Study Field Sampling Plan* (DOE 1995a). State of Utah water quality standards are compared to 1996 and historic sample results in Table 10.

Analyte concentrations detected in samples from Montezuma Creek upstream of the millsite were below State standards. Samples collected from Vega Creek also had concentrations below State standards. On the millsite, samples collected from SW92-04 and SW92-05 exceeded the gross alpha and total dissolved solids (TDS) standards in at least one sample.

Table 9. 1996 Surface Water Sampling and Analytical Design Schedule

Date	Location	Description	Sites Sampled	Analytes Measured
February 1996	Upgradient	Vega Creek	SW95-01	Al, gross α, As, gross β, Ca, Cl, Co, Cu, F, K, Mg, Mn, Mo, Na, NH_4, Ni, ($N0_2$ + NO_3)-N, Pb, Pb-210, Ra-226, Rn-222, Sb, Se, Sn, SO_4, TDS, Th-230, U, U-234, U-235, U-238, V, Zn
	Downgradient	Montezuma Creek	SW94-01	Note: Metals analyses were conducted on filtered and unfiltered samples.
April 1996	Millsite	Montezuma Creek	SW92-05	Al, gross α, As, gross β, Ca, Cl, Co, Cu, F, K, Mg, Mn, Mo, Na, NH_4, ($N0_2$ + NO_3)-N, Pb, Pb-210, Ra-226, Rn-222, Se, SO_4, TDS, Th-230, U, U-234, U-235, U-238, V, Zn
	Downgradient	Montezuma Creek	SW92-07, SW94-01, Sorenson	Note: Metals analyses were conducted on filtered and unfiltered samples
June 1996	Upgradient	Montezuma Creek	SW92-01	Al, gross α, As, gross β, Ca, Cl, Co, Cu, F, K, Mg, Mn, Mo, Na, NH_4, ($N0_2$ + NO_3)-N, Pb, Pb-210, Ra-226, Rn-222, Se, SO_4, TDS, Th-230, U-234, U-235, U-238, V, Zn Note: Metals analyses were conducted on filtered and unfiltered samples
	Downgradient	Montezuma Creek	SW92-07, SW94-01, 14SW96-01, 15SW96-01, 16SW96-01, 17SW96-01, 18SW96-01, 19SW96-01, 20SW96-01, 21SW96-01, 22SW96-01, 23SW96-01, 24SW96-01, 25SW96-01, Sorenson	
October 1996	Uprgadient	South Creek	SW92-01	Al, gross α, As, gross β, Ca, Cl, Co, Cu, F, K, Mg, Mn, Mo, Na, NH_4, ($N0_2$ + NO_3)-N, Pb, Pb-210, Ra-226, Rn-222, Se, SO_4, TDS, Th-230, U-234, U-235, U-238, V, Zn Note: Metals analyses were conducted on filtered and unfiltered samples
		North Creek	SW92-02	
		Montezuma Creek	SW92-03	
	Millsite	Montezuma Creek	SW92-04, SW92-05	
		Groundwater Seep	Slade Spring	
	Downgradient	Montezuma Creek	SW92-06, SW92-07, SW92-08, SW92-09, W-4, Sorenson, Montezuma Canyon, SW94-01	

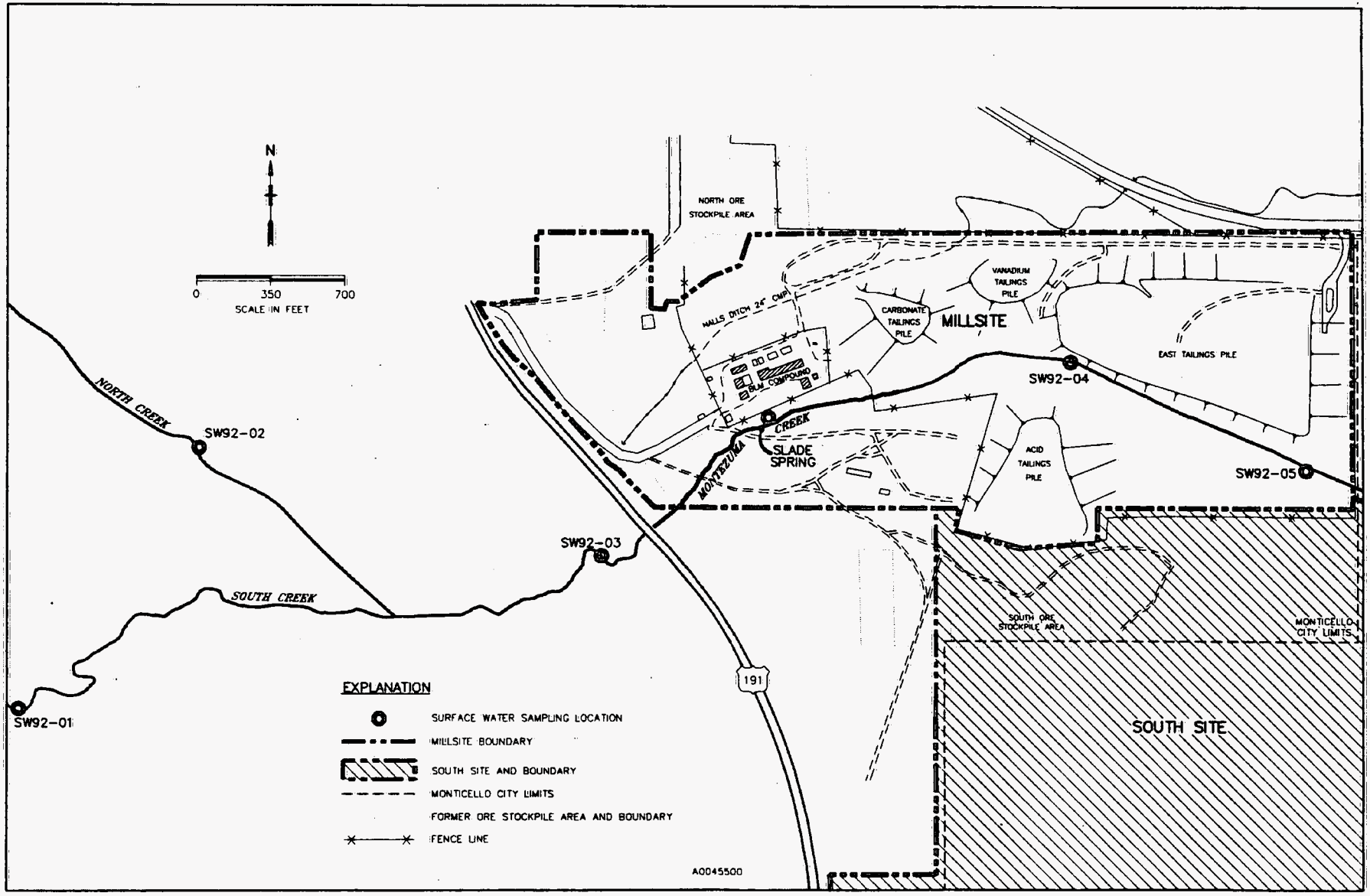

Figure 5. Surface Water Sampling Locations On and Upstream of MMTS

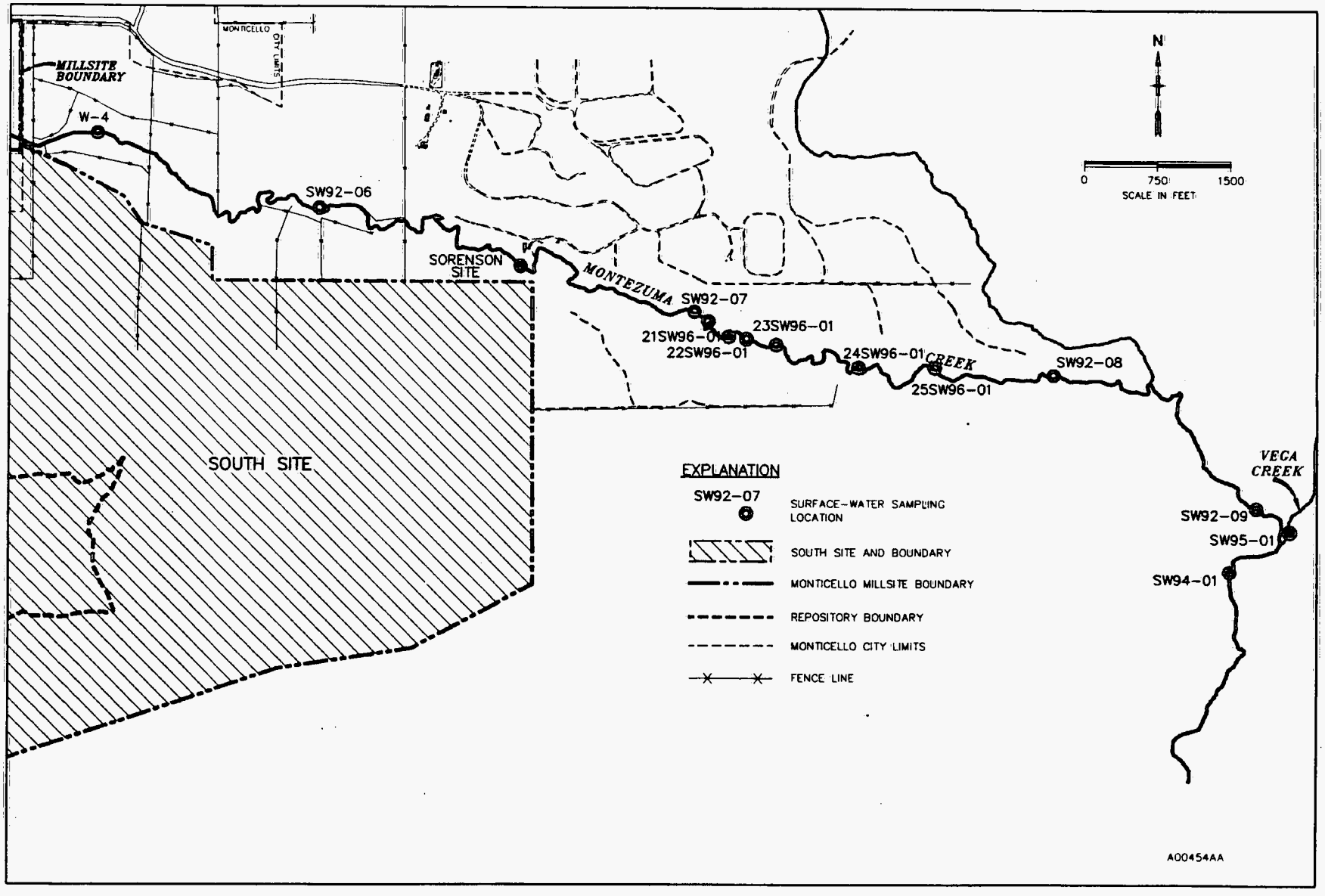

Figure 6. Surface Water Sampling Locations Downstream Of MMTS

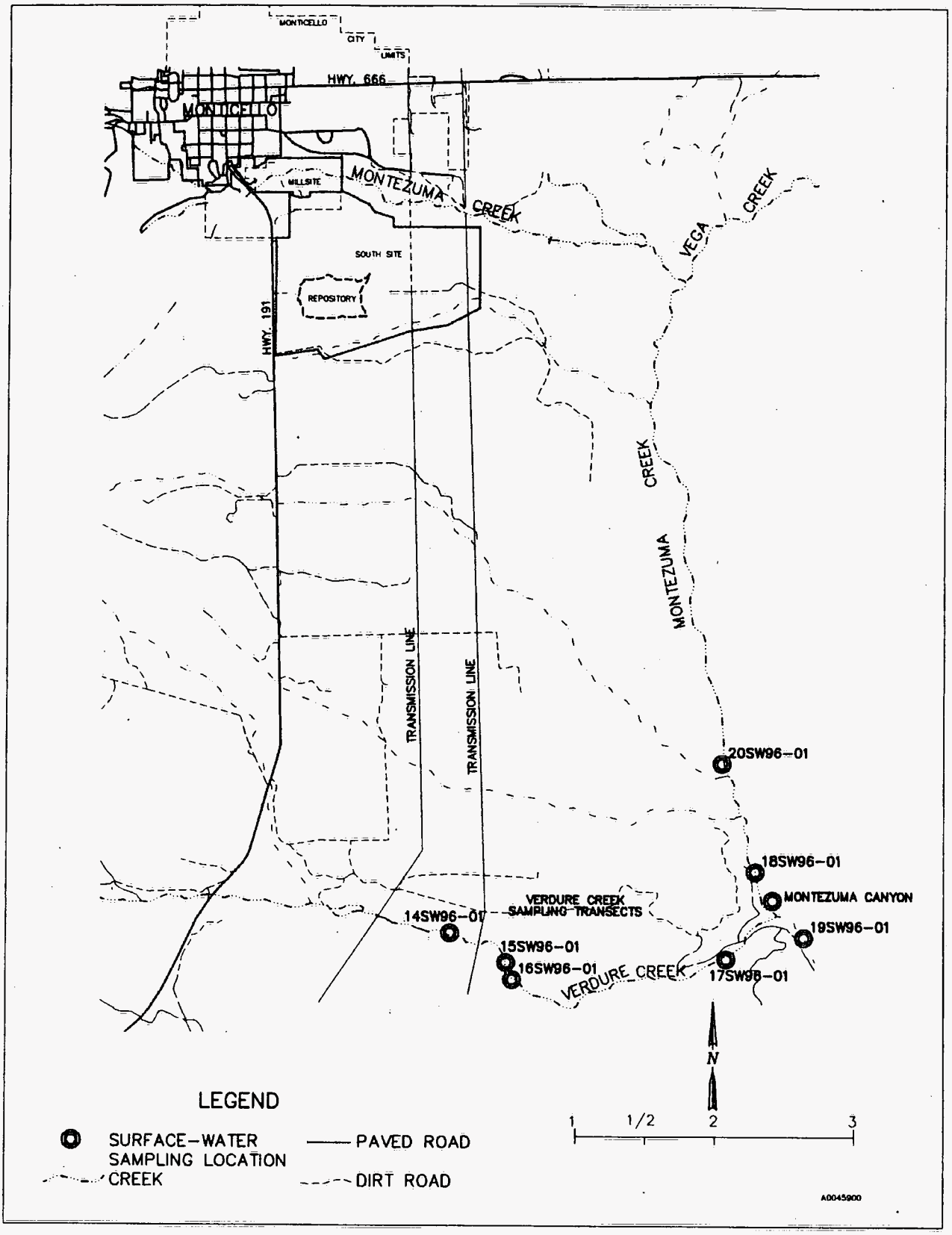

Figure 7. Surface Water Sampling Locations Downstream of MMTS and on Verdure Creek

Table 10. Comparison of State of Utah Water Quality Standards[a] with 1996 and Historical Maximum Concentrations in Montezuma Creek[b]

Constituent	State Standard		1996 Maximum[c]			Historical Maximum[c,d]		
			Up-Gradient	On Site	Down-Gradient	Up-Gradient	On Site	Down-Gradient
Common Ions								
Fluoride[e]	1.4-2.4	mg/L	0.231	~0.186	0.334	0.289	~0.197	0.267
Nitrate (as N)[f]	10	mg/L	~0.082	~0.236	0.588	5.67	2.982	10.007
Total Dissolved Solids	1200	mg/L	1190	1500	1690	1842	1860	1700
Field Measurements								
pH	6.5-9.0		---	7.20-7.88	7.35-8.94	7.2-9.16	6.6-8.67	6.74-9.6
Metals								
Arsenic	0.05	mg/L	~0.0025	<0.0011	0.0051	~0.0039	~0.0339	0.027
Barium	1.0	mg/L	---	---	---	~0.121	0.1	~0.126
Boron	0.75	mg/L	---	---	---	0.14	~0.0926	0.257
Cadmium	0.01	mg/L	---	---	---	<0.001	<0.001	<0.001
Chromium	0.05	mg/L	---	---	---	~0.0049	<0.006	0.0263
Copper	0.2	mg/L	0.005	~0.0024	0.0053	~0.0101	~0.017	0.0515
Iron	1.0	mg/L	---	---	---	2.85	1.34	4.45
Lead	0.05	mg/L	0.0199	<0.0011	0.15	0.0245	~0.0051	0.0065
Mercury	0.002	mg/L	---	---	---	<0.0001	~0.0002	<0.0001
Selenium	0.01	mg/L	<0.0022	~0.0024	0.004	0.0097	~0.012	0.042
Silver	0.05	mg/L	---	---	---	<0.007	0.0209	~0.001
Radiological								
Gross Alpha	15	pCi/L	8.13	23.35	207.08	76	162	517
Gross Beta	50	pCi/L	<16.43	<48.64	52.94	26.5	48	187
Radium-226+228	5	pCi/L	0.41	0.28	1.1	3.3	0.96	1.6

[a] State of Utah Water Quality Standards for the Montezuma Creek segment, Utah Administrative Code Rule R317-2. Not all State standards are listed in this table.
[b] A "---" indicates no data available; a "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit); a "~" indicates an estimated value.
[c] The values are in units shown under the State Standard column.
[d] Based on maximum concentrations observed from 1984 through 1995.
[e] Allowable maximum concentration varies according to the daily maximum mean air temperature.
[f] Nitrate (as N) was derived using the following conversion, Nitrate (as N) = $NO_3 \div 4.427$.

Among samples collected downstream of the millsite, the following standards were exceeded in one or more samples: gross alpha, gross beta, lead, and TDS (Table 10). The gross alpha standard was exceeded at all downstream locations with the exception of site 19SW96-01. Gross beta activity was detected in excess of the State standard (50 pCi/L) in samples collected from the Sorenson site during the April and October sampling events. The lead standard (0.05 mg/L) was exceeded in a sample collected from location SW92–06. TDS concentrations exceeded the State standard at locations SW92–05, SW92–07, Sorenson, SW94–01, 18SW96–01, 19SW96–01, 20SW96–01, 21SW96–01, 22SW96–01, 24SW96–01, and 25SW96–01.

Concentrations of several analytes in Montezuma Creek samples, including gross alpha, gross beta, molybdenum, uranium, and vanadium, were generally higher downstream of the millsite than on the millsite. This increase in analyte concentrations may result from discharge of contaminated groundwater into the creek. Following are indications that contaminated alluvial groundwater is discharging into Montezuma Creek downstream of the site (1) seepage from the stream banks is often visible along the creek downstream of the eastern millsite boundary, (2) stream flow measurement data typically indicate a net increase in creek flow between sites SW92–05 and Sorenson, and (3) historical assessments of water quality data indicate that the maximum concentrations of mill tailings-related constituents in Montezuma Creek water were typically detected in samples from W–4 or the Sorenson site.

Slade Spring was the only groundwater seep sampled in 1996 (Figure 6); samples were not collected from locations W–2, Carbonate Seep, and North Drainage because of insufficient water. Flow from Slade Spring discharges directly into Montezuma Creek via a well defined channel at approximately 40 gallons per minute. Consistent flow and a positive field-chlorine test in 1996 suggest a municipal source. The gross alpha standard of 15 pCi/L was exceeded in the sample collected from Slade Spring (22.04 pCi/L); all other analyte concentrations were below State standards.

3.7 Groundwater

The 1996 groundwater monitoring program at the MMTS involved a continuation of the OU III RI through July of 1996. The objectives of the RI in 1996 were (1) to characterize the extent of contamination within the alluvial aquifer; (2) to determine if water quality within the Burro Canyon aquifer is being degraded by contaminated alluvial groundwater; and (3) to verify compliance with Federal and State groundwater quality standards. After the July sampling event, the RI was completed, and the groundwater sampling frequency was reduced to an annual basis until remediation of the millsite commences.

Groundwater sampling in 1996 was conducted in four sampling events according to the schedule presented in Table 11. Sampling was conducted using standardized, approved methods specified in the *Draft Final Monticello Mill Tailings Site Operable Unit III Remedial Investigation/Feasibility Study Field Sampling Plan* (DOE 1995a). Table 11 also lists the wells that were sampled and analytes measured for each sampling event. Field measurements made at

Table 11. Groundwater Sampling and Analytical Design Schedule

Date	Location	Formation	Wells Sampled	Analytes Measured
February 1996	Downgradient	Alluvial	95-01, 95-03, P92-02, P92-04	Al, gross α, As, gross β, Ca, Cl, Co, Cu, F, K, Mg, Mn, Mo, Na, NH_4, Ni, $(NO_2 + NO_3)$-N, Pb, Pb-210, Ra-226, Rn-222, Sb, Se, Sn, SO_4, TDS, Th-230, U, U-234, U-235, U-238, V, Zn
		Burro Canyon	95-02, 95-04, 95-06, 95-08	
	Cross-gradient	Dakota Sandstone	95-07	
April 1996	Millsite	Alluvial	82-30B, 31SW91-35, 31SW91-50, 31SW91-55, 36SE91-58, 36SE93-201-2	Al, gross α, As, gross β, Ca, Cl, Co, Cu, F, K, Mg, Mn, Mo, Na, NH_4, $(NO_2 + NO_3)$-N, Pb, Pb-210, Ra-226, Rn-222, Se, SO_4, TDS, Th-230, U, U-234, U-235, U-238, V, Zn
		Burro Canyon	93-01	
	Downgradient	Alluvial	92-09, 92-11, 95-01, 95-03, P92-04	
		Burro Canyon	95-02, 95-04, 95-06, 95-08, 92-10	
		Dakota Sandstone	92-12	
	Cross-gradient	Dakota Sandstone	95-07	
July 1996	Downgradient	Alluvial	95-01, 95-03, P92-02, P92-04, P92-09	Al, gross α, As, gross β, Ca, Cl, Co, Cu, F, K, Mg, Mn, Mo, Na, NH_4, $(NO_2 + NO_3)$-N, Pb, Pb-210, Ra-226, Rn-222, Se, SO_4, TDS, Th-230, U, U-234, U-235, U-238, V, Zn
		Burro Canyon	95-02, 95-04, 95-06, 95-08	
	Cross-gradient	Dakota Sandstone	95-07	

Table 11 (continued). Groundwater Sampling and Analytical Design Schedule

Date	Location	Formation	Wells Sampled	Analytes Measured
October 1996	Upgradient	Alluvial	92-01, 92-03, 92-05	Al, gross α, As, gross β, Ca, Cl, Co, Cu, F, K, Mg, Mn, Mo, Na, NH_4, (NO_2 + NO_3)-N, Pb, Pb-210, Ra-226, Rn-222, Se, SO_4, TDS, Th-230, U-234, U-235, U-238, V, Zn
		Burro Canyon	92-02, 92-04, 92-06	
		Dakota Sandstone	92-13	
	Millsite	Alluvial	82-30B, 82-31B-E, 82-40A, 82-42, 31SW91-03, 31SW91-14, 31SW91-23, 31SW91-35, 31SW91-50, 31SW91-55, 36SE91-58, 36SE93-201-2	
		Burro Canyon	93-01	
		Dakota Sandstone	31SW93-199-1	
		Mancos Shale	31SW93-203-2, 36SE91-61	
	Downgradient	Alluvial	82-07, 88-85, 92-07, 92-08, 92-09, 92-11, 95-01, 95-03, P92-02, P92-04, P92-09	
		Burro Canyon	83-70, 92-10, 95-02, 95-04, 95-06, 95-08	
		Dakota Sandstone	92-12	
	Cross-gradient	Burro Canyon	31NE93-205	
		Dakota Sandstone	95-07	

each well included alkalinity, electrical conductivity, dissolved oxygen, oxidation-reduction potential (Eh), temperature, and turbidity. Figure 8 shows the sampling locations of on-site and upgradient wells, and Figure 9 shows the sampling locations of downgradient and cross-gradient wells. Analytical results of all 1996 well samples are included in the appendix, Table A–19.

As part of the RI, seven new wells (95-01, -02, -03, -04, -06, -07, and -08) were installed and sampled in 1996. These wells were installed to provide better definition of the extent of contamination in the alluvial aquifer, to provide a wider spatial distribution of Burro Canyon water quality, and to aid in the interpretation of the hydrologic interaction between the alluvial and Burro Canyon aquifers.

Sample results from upgradient alluvial and Burro Canyon wells were below Federal and State standards. The pH measured at upgradient Dakota Sandstone well (92-13) exceeded the standard (measured value was 9.06 compared to the State standard of 6.5–8.5). With the exception of the pH, analyte concentrations in the sample collected from this well were below Federal and State standards. Maximum concentrations of analytes measured in alluvial wells are listed and compared to Federal and/or State standards and historical maximums in Table 12. Maximum concentrations of groundwater analytes that exceeded standards in 1996 are posted for each well in Figures 10 and 11.

On-site alluvial groundwater is contaminated at many locations by elements leached from the mill tailings piles. In 1996, the highest concentrations of metals and radionuclides were generally detected in samples from wells 36SE93–201–2, 31SW91–35, and 31SW91–50 (Figure 10). Standards were exceeded in one or more on-site alluvial well samples for arsenic, gross alpha, fluoride, molybdenum, (nitrate + nitrite)-N, pH, radium-226 + 228, selenium, and uranium-234 + -238 (Table 12). Sample results from the on-site Dakota Sandstone well sampled in October of 1996 (31SW93-199-1) exceeded standards for fluoride, molybdenum, and (nitrate + nitrite)-N, and the gross alpha, pH, selenium, and uranium-234 + -238 standards were exceeded in samples collected from onsite Mancos Shale wells (Figure 10). All sample results for the on-site Burro Canyon well (93-01) were below applicable standards.

Samples from downgradient alluvial wells provide evidence of off-site migration of contaminants. In 1996, the standards for gross alpha, molybdenum, selenium, and uranium-234 + 238 were exceeded in samples from one or more downgradient alluvial wells (Figure 11). Results of the 1996 installation and sampling of alluvial wells 95-01 and 95-03 indicate that uranium contamination does not extend downgradient of well 92-09. The average 1996 uranium-234 + 238 sample concentration from well 92-09 was 162 pCi/L, and the average 1996 uranium-234 + 238 sample concentrations from wells 95-03 and 95-01 were 5.25 pCi/L and 1.08 pCi/L, respectively.

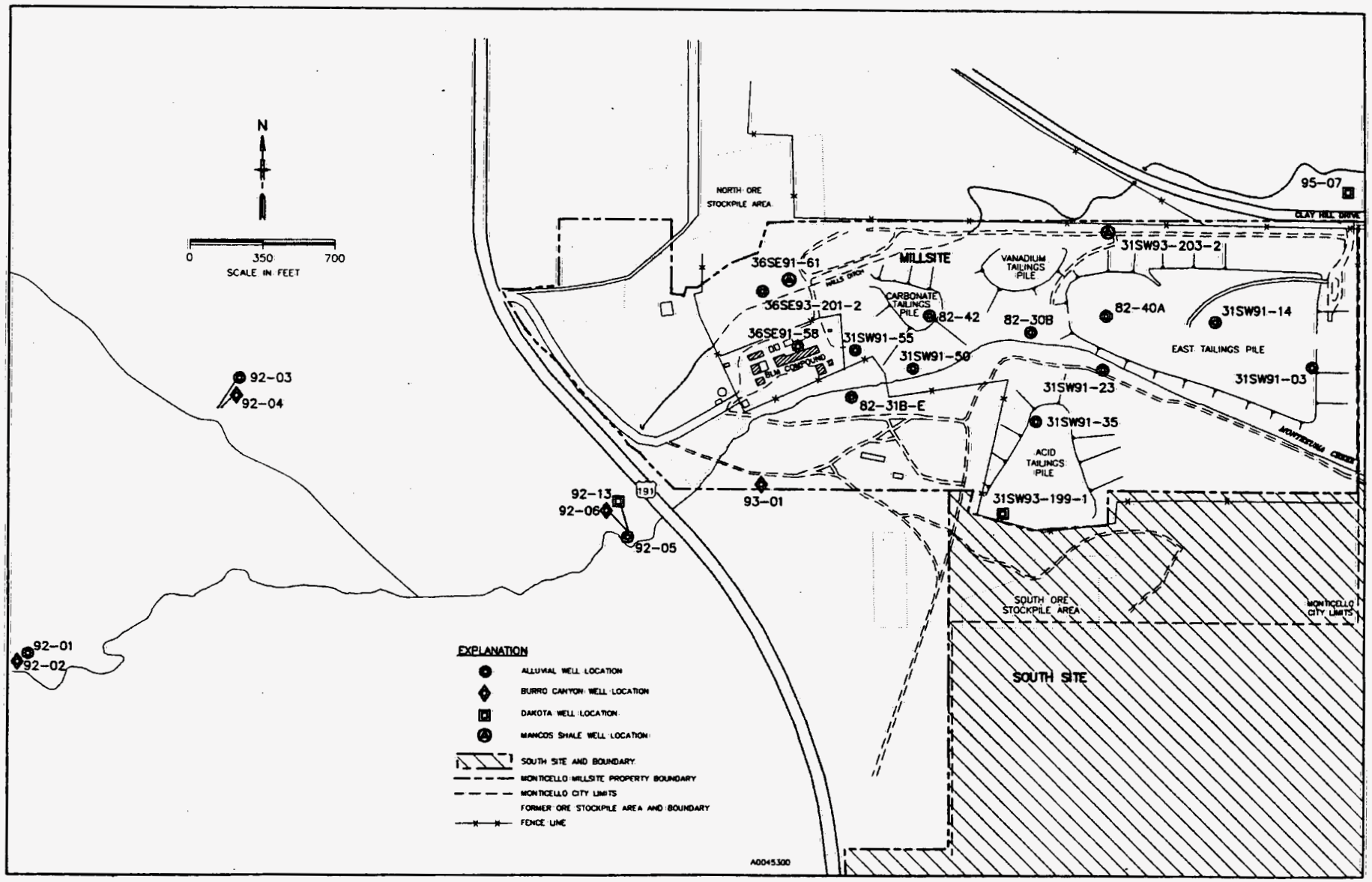

Figure 8. Groundwater Sampling Locations On and Upgradient of MMTS

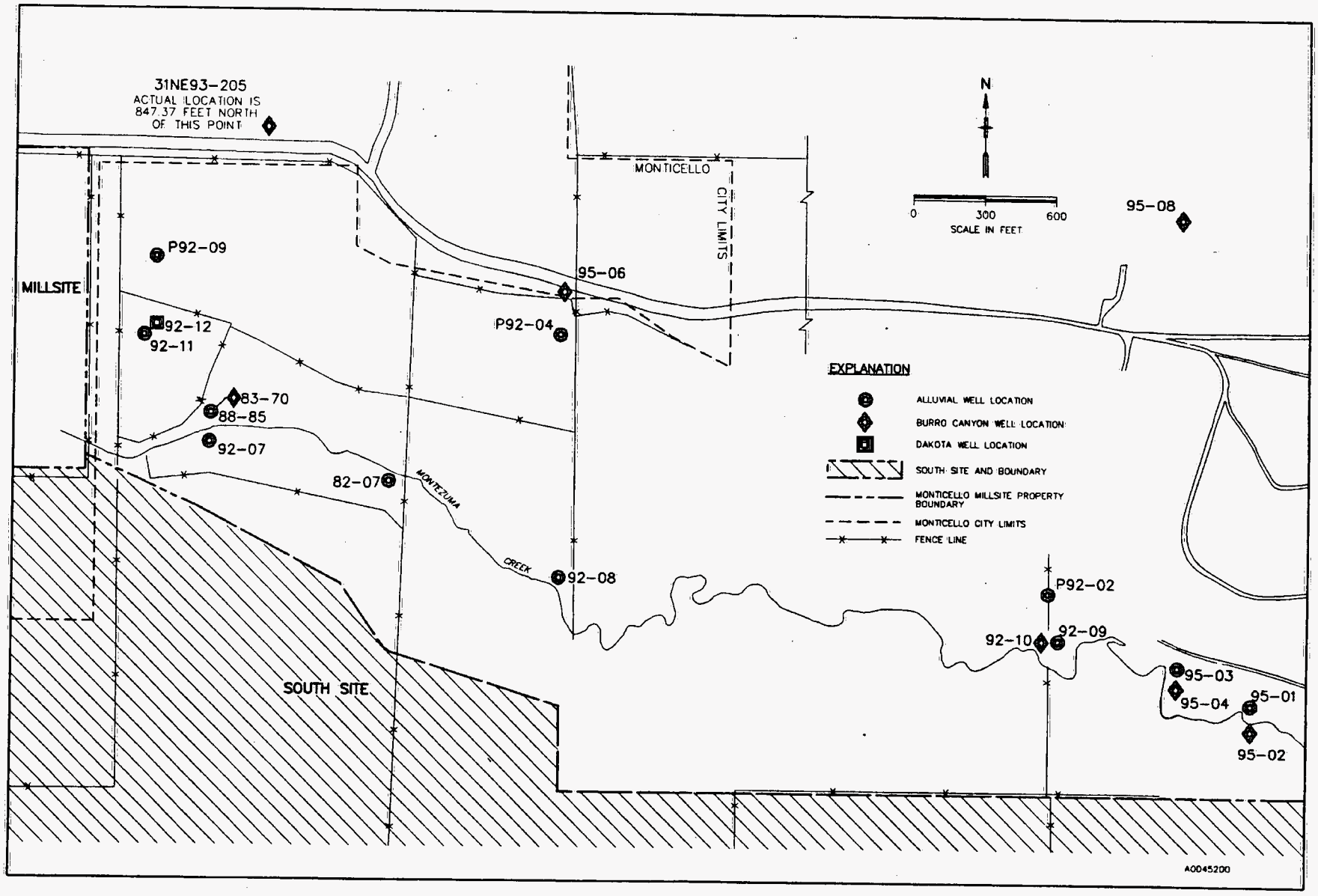

Figure 9. Groundwater Sampling Locations Downgradient and Cross-gradient of MMTS

Table 12. Comparison of Federal[a] and State of Utah[b] Groundwater Quality Standards with 1996 and Historical Maximum Concentrations in Alluvial Aquifer[c]

Constituent	Federal/State Standard		1996 Maximum[d]			Historical Maximum[d,e]		
			Up-Gradient	On Site	Down-Gradient	Up-Gradient	On Site	Down-Gradient
Common Ions								
Fluoride	2.4	mg/L	0.287	5.27	0.936	0.242	5.66	0.8
Nitrate (as N)[f]	10.0	mg/L	~0.249	263	5.37	4.721	60.086	33.308
Field Measurements								
pH	6.5-8.5		6.82-7.00	6.28-8.96	6.51-7.92	6.37-7.32	6.0-9.25	6.0-8.8
Metals								
Arsenic	0.05	mg/L	0.0017	0.519	0.0393	~0.0036	1.104	0.054
Barium	1.0	mg/L	---	---	---	~0.074	0.85	1.000
Cadmium	0.01	mg/L	---	---	---	<0.001	0.005	0.005
Chromium	0.05	mg/L	---	---	---	<0.006	0.037	0.01
Copper	1.0	mg/L	0.0652	0.0379	0.0058	~0.0068	0.174	0.0285
Lead	0.05	mg/L	0.0094	0.0153	0.0066	0.0032	~0.0229	0.0248
Mercury	0.002	mg/L	---	---	---	<0.0001	0.0023	<0.001
Molybdenum	0.1	mg/L	0.0029	34.2	0.236	~0.0036	1.44	0.53
Selenium	0.01	mg/L	<0.0022	0.402	0.0263	~0.0051	0.16	0.06
Silver	0.05	mg/L	---	---	---	<0.007	~0.0067	0.152
Zinc	5.0	mg/L	0.069	0.0345	0.027	0.0297	5.02	0.47
Radiological								
Gross Alpha (excluding Radon & Uranium)[g]	15	pCi/L	<21.46	~222.87	~321.8	<77	~4318.9	873.31
Radium-226+228	5	pCi/L	0.33	41.97	3.19	0.56	44	0.9
Uranium-234+238[h]	30	pCi/L	6.78	4871.46	1046.76	8.48[i]	8588.8	2281.4

[a] Standards from the Uranium Mill Tailings Radiation Control Act, revised in 1986.

[b] State of Utah Ground Water Quality Standards, Title 26, Chapter 11, Utah Code Annotated. Not all State standards are listed in this table.

[c] A "---" indicates no data available; a "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit); a "~" indicates an estimated value.

[d] The values are in units shown under the Federal/State Standard column.

[e] Based on maximum concentrations observed from 1984 through 1995.

[f] Nitrate (as N) was derived using the following conversion: nitrate (as N) = $NO_3 \div 4.427$.

[g] Measured values represent total gross alpha minus uranium activity. Uranium concentrations, which were measured in milligrams per liter, were converted to picocuries per liter. This conversion assumes equilibrium and an activity of 0.687 picocuries per microgram (pCi/μg).

[h] Total uranium concentrations, which were measured in milligrams per liter, were converted to Uranium-234+238 in picocuries per liter for comparison purposes. This conversion assumes equilibrium and an activity of 0.671 picocuries per microgram (pCi/μg).

[i] Extreme-values testing of uranium results from samples collected in 1993 indicated that a value (155.03 pCi/L) was an outlier; this value from an upgradient well was not included in this table.

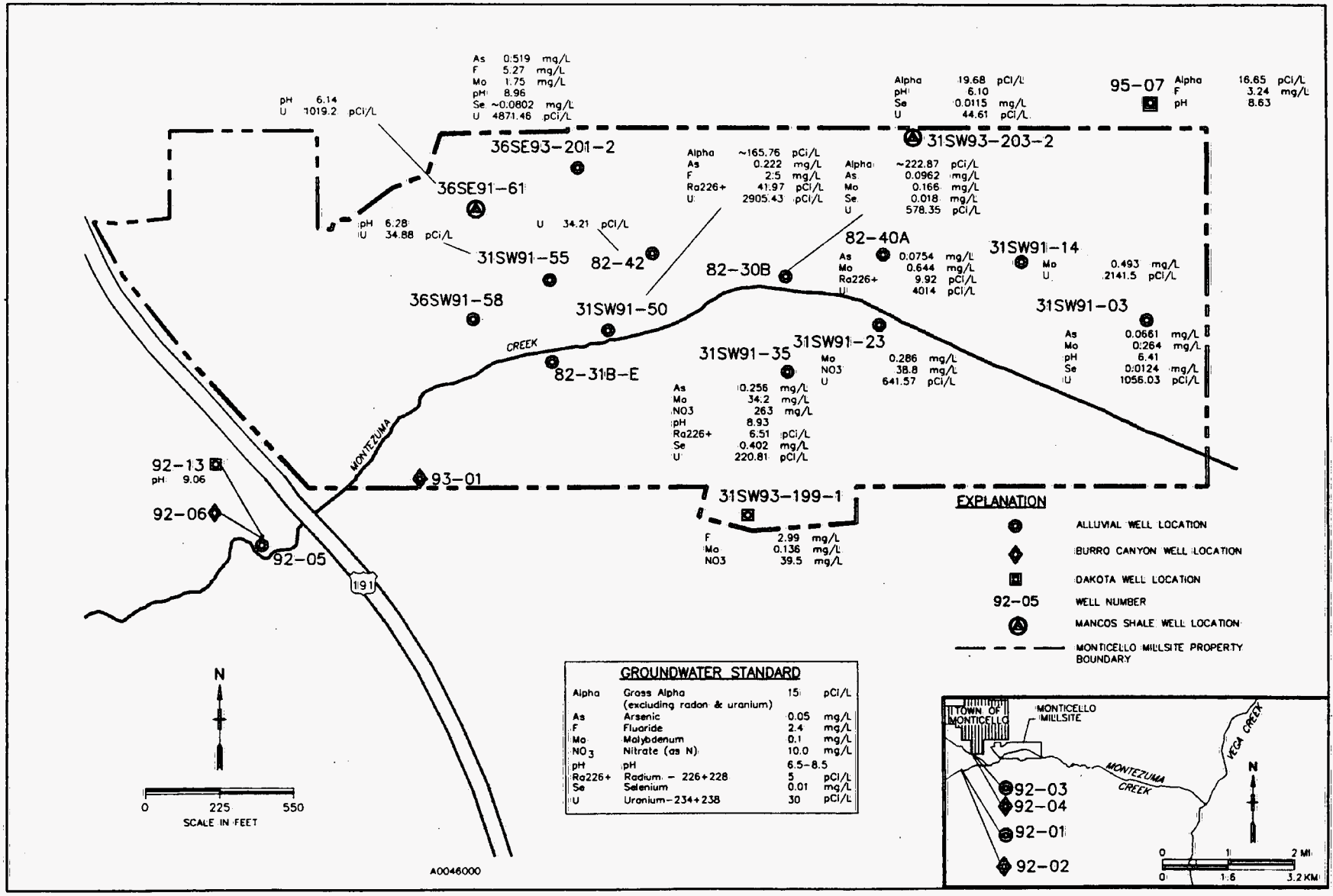

Figure 10. Maximum Concentrations of Groundwater Analytes that Exceed Federal/State Standards in Wells Upgradient of MMTS

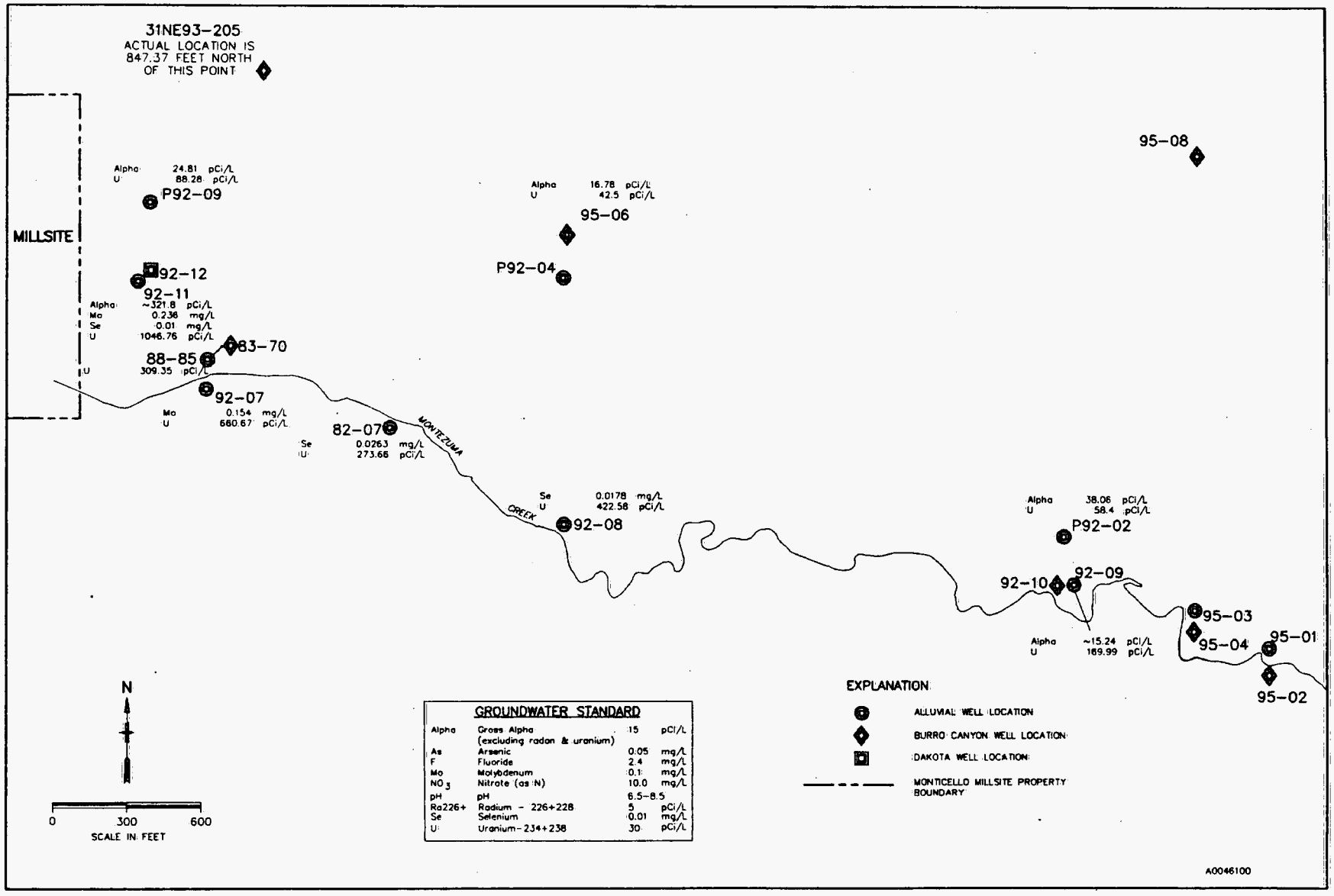

Figure 11. Maximum Concentrations of Groundwater Analytes that Exceed Federal/State Standards in Well Samples Downgradient and Upgradient of MMTS

Concentrations of samples collected from Burro Canyon well 95-06 exceeded the gross alpha and uranium-234 + 238 standards. All other analyte concentrations measured in downgradient and cross-gradient Burro Canyon wells were below applicable standards.

Results from downgradient Dakota Sandstone well 92-12 were below applicable standards. Cross-gradient Dakota Sandstone well 95-07 had sample concentrations that exceeded the gross alpha, fluoride, and pH standards.

A complete description of the groundwater portion of the RI, including detailed analysis of the nature and extent of groundwater contamination, groundwater flow, contaminant transport, and groundwater and surface water interaction, will be included in the OU III RI report (in progress).

3.8 Ecological Risk Assessment

During 1996, sampling and analysis associated with the OU III ecological risk assessment (ERA) (DOE 1997c) were conducted. The objective of the ERA is to determine if elevated concentrations of millsite-related contaminants are adversely affecting the Montezuma Creek ecosystem. A detailed description of the sampling and analysis plan for the ERA is in the *Draft Final Monticello Mill Tailings Site Operable Unit III Remedial Investigation/Feasibility Study Work Plan* (DOE 1995c). Data collection in support of the ERA began in 1994 and concluded in 1996. A detailed discussion of the findings will be presented in the OU III RI and OU III ERA (in progress). A remediation strategy for Montezuma Creek soil, sediment, and surface water will be based in part on the results of the risk assessment.

Activities conducted in 1996 to support the ERA included ecological surveys, biotic media sampling, and abiotic media (soil, sediment, and surface water) sampling.

3.8.1 Ecological Surveys

Ecological surveys were conducted in spring 1996 to document the presence or absence of State-sensitive or Federal threatened and endangered (T&E) receptors of potential concern that had not previously been identified within OU III. The surveys focused on the peregrine falcon (endangered), southwestern willow flycatcher (endangered), and fish in Montezuma Creek. The surveys indicated that the peregrine falcon, southwestern willow flycatcher, and fish were not present within OU III (Craig 1996, DOE 1996d, Oak Ridge National Laboratory 1996).

3.8.2 Biotic Media Sampling

The primary goal of biotic media sampling was to provide analytical data that could be used to calculate contaminant doses to receptors of concern. Samples of vegetation, terrestrial invertebrates, and benthic macroinvertebrates were collected at transects along Montezuma Creek and Verdure Creek, the latter of which was used as a background or "reference" area. Biotic media sampling was conducted in accordance with the sampling procedures and quality assurance/quality control requirements specified in the *Monticello Mill Tailings Site Operable*

Unit III Remedial Investigation/Feasibility Study—Draft Final Field Sampling Plan (DOE 1995a) and *Monticello Mill Tailings Site, Operable Unit III Remedial Investigation/Feasibility Study—Draft Final Quality Assurance Project Plan* (DOE 1995d). The sampling methods used to obtain biota samples for the ERA are described in the following subsections.

3.8.2.1 Vegetation Sampling

One grass, one forb, and one shrub composite sample were collected at Transects 21–25 along Montezuma Creek and at Transects 14–16 along Verdure Creek (Figure 12). Different species within each vegetation type were sampled in the approximate ratios in which the species occurred in the field. Grasses and forbs were clipped at ground level and placed in separate polyethylene sample bags. Shrubs were clipped at the base of the current year's growth. All samples were analyzed for metals, gross alpha and gross beta radioactivity, and selected radionuclides. Analytical results are included in the appendix, Table A-18.

3.8.2.2 Terrestrial Invertebrate Sampling

Terrestrial invertebrates were sampled at Transects 21–25 along Montezuma Creek and at Transects 14–16 along Verdure Creek (Figure 12). Attempts were made to collect one composite flying insect sample and one composite non-flying insect sample at each transect. However, composite samples could not be collected at each transect because the amount of terrestrial invertebrates available at some transects did not provide a sufficient sample mass for analysis. The limited mass available was attributed to the unusually dry conditions in the Monticello area during 1996. To obtain a sufficient sample mass, samples collected along all Montezuma Creek transects were composited to form a single flying insect sample, and samples collected along all Verdure Creek transects were composited to form a single flying insect sample. Sufficient sample mass was obtained to form non-flying insect samples at each transect for metals analysis and at most transects for radiological analysis; samples from Transects 22 and 23 (along Montezuma Creek) were composited to form one sample for radiological analyses.

Vegetation-dwelling invertebrates were collected with a sweep net that was passed through vegetation along the length of the transect. Ground-dwelling invertebrates were collected in pitfall traps located along the transects. Samples were contained in re-sealable polyethylene sample bags, placed in coolers, and then analyzed for metals, gross alpha and gross beta radioactivity, and radium-226. Analytical results are included in the appendix, Table A-18.

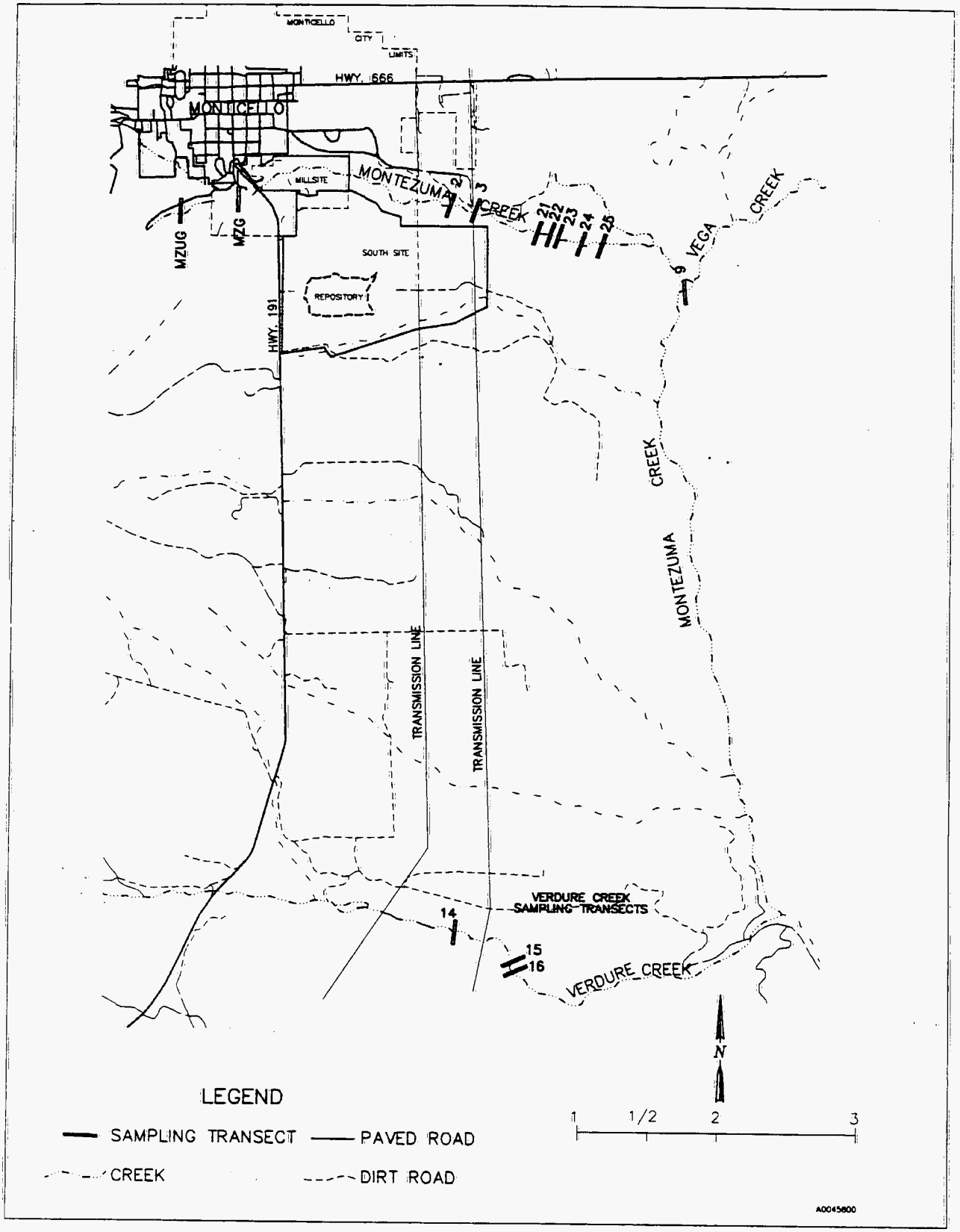

Figure 12. ERA Sampling Transects Below MMTS - Montezuma Creek and on Verdure and Vega Creek

3.8.2.3 Benthic Macroinvertebrate Sampling

Benthic macroinvertebrate samples were collected upstream of the Monticello millsite (MZG and MZUG in Figure 12) within Montezuma Creek; near Transects 2, 3, and 9 within Montezuma Creek; and near Transect 10 within Verdure Creek during August 1996. Sampling was performed by Oak Ridge National Laboratory as part of a study designed to (1) evaluate and document ecological conditions along Montezuma Creek and in the Verdure Creek reference area and (2) monitor changes in the ecological conditions during implementation of MMTS remedial actions.

Samples were collected with an aquatic kick net fitted with a 500-micrometer meshed net and were collected in triplicate from each transect. Collections were made by disturbing the bottom of the stream by foot or hand and allowing the dislodged invertebrates to float into the net. When enough estimated biomass was accumulated, the specimens were placed on filter paper, blotted to remove visible moisture, and weighed. Samples were analyzed for metals, gross alpha and gross beta radioactivity, and selected radionuclides. Analytical results are included in the appendix, Table A-18.

3.8.2.4 Results

In comparison to sample concentrations measured along Verdure Creek and lower Montezuma Creek, slightly elevated metals concentrations and radioactivity levels were found in biotic media samples collected immediately downstream of the millsite. Interpretations of these analytical results, particularly in relation to the Montezuma Creek ecosystem, are provided in the OU III ERA.

3.8.3 Abiotic Media Sampling

Surface water, soil, and sediment samples were collected along Montezuma and Verdure Creeks during spring and summer 1996 to support the OU III ERA. The primary goal of abiotic media sampling was to provide analytical data that could be used to calculate contaminant doses to receptors of concern. Results of surface water sampling are discussed in Section 3.6, Surface Water.

Soil and sediment samples were collected at Transects 21–25 across Montezuma Creek and at Transects 14–16 across Verdure Creek (Figure 12). At each transect, one composite near-surface (0- to 3-inch) soil sample and one composite subsurface (3- to 24-inch) soil sample were collected on each side of the creek. Each composite sample was composed of soil from three to five augered boreholes. One composite sediment sample consisting of five near-surface (0- to 3-inch or 0- to 6-inch) grab samples was collected at each transect that crossed a channeled section of the creek. At transects that crossed ponded sections of the creek, five discrete near-surface (0- to 3-inch or deeper) sediment grab samples were collected near the pond shore. Samples were analyzed for selected metals, ions, and radionuclides. In addition, vertical profiles of Ra-226

concentrations were measured at each soil boring using field instrumentation. Analytical results and radiological field measurements are summarized in the appendix, Tables 19 and 20.

The primary source of soil and sediment contamination in the Montezuma Creek valley is the millsite. Montezuma Creek, which flows through tailings piles on the millsite, has been the primary transport mechanism for contaminated soils and sediment. Analytical results indicate that concentrations of copper, uranium, vanadium, radium-226, lead-210, uranium-234, uranium-235, uranium-238, and thorium-230 are significantly higher in Montezuma Creek soils and sediments than in Verdure Creek soils and sediments. The most extensive contamination occurs in the upper reaches of Montezuma Creek below the millsite. A detailed interpretation of these analytical results is provided in the OU III RI and OU III ERA.

4.0 References

40 CFR 192. U.S. Environmental Protection Agency, "Uranium Mill Tailings Radiation Control Act," *U.S. Code of Federal Regulations*.

40 CFR 302. U.S. Environmental Protection Agency, "Designation, Reportable Quantities, and Notification," *U.S. Code of Federal Regulations*.

40 CFR 355. U.S. Environmental Protection Agency, "Emergency Planning and Notification," *U.S. Code of Federal Regulations*.

40 CFR 761. U.S. Environmental Protection Agency, "Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions," *U.S. Code of Federal Regulations*.

State of Utah, 1992. *Authorization to Discharge Under the UPDES General Permit for Storm Water Discharges from Construction Activities That Are Classified as "Associated with Industrial Activity,"* Division of Water Quality, Department of Environmental Quality, Salt Lake City, UT.

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Appendix

Table A-1. Radon Data for Monticello, First Quarter 1996 (date installed: 01/03/1996; date removed: 04/02/1996) [a]

Sample Location	Detector Number	Radon Concentration (pCi/L)	Radon Concentration (μCi/mL) [b]
R-M-1-RN	3866014	0.5	5E-10
R-M-1-RN	3866150	0.5	5E-10
R-M-2-RN	3992925	0.7	7E-10
R-M-2-RN	3993011	0.4	4E-10
R-M-3-RN	3992987	0.8	8E-10
R-M-3-RN	3993000	0.8	8E-10
R-M-4-RN	3865950	<0.3	<3E-10
R-M-4-RN	3865975	<0.3	<3E-10
R-M-5-RN	3992869	0.6	6E-10
R-M-5-RN	3992911	0.4	4E-10
R-M-6-RN	3993002	0.5	5E-10
R-M-6-RN	3993051	0.6	6E-10
R-M-7-RN	3865973	<0.3	<3E-10
R-M-7-RN	3865993	<0.3	<3E-10
RN-M-04	3992901	1.5	1.5E-09
RN-M-04	3993013	1.6	1.6E-09
RN-M-06	3865985	0.5	5E-10
RN-M-06	3866138	<0.3	<3E-10
RN-M-07	3992938	2.1	2.1E-09
RN-M-07	3993034	2.5	2.5E-09
RN-M-10	3992814	0.4	4E-10
RN-M-10	3993081	<0.3	<3E-10
RN-M-11	3992812	<0.3	<3E-10
RN-M-11	3992815	<0.3	<3E-10

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit).
[b] Scientific notation E-10 = "x 10^{-10}".

Table A-1 (continued). Radon Data for Monticello, First Quarter 1996 (date installed: 01/03/1996; date removed: 04/02/1996) [a]

Sample Location	Detector Number	Radon Concentration (pCi/L)	Radon Concentration (μCi/mL) [b]
RN-M-13	3992871	<0.3	<3E-10
RN-M-13	3992958	<0.3	<3E-10
RN-M-14	3992850	<0.3	<3E-10
RN-M-14	3992866	<0.3	<3E-10
RN-M-15	3992919	0.5	5E-10
RN-M-15	3993010	0.5	5E-10
RN-M-16	3865951	<0.3	<3E-10
RN-M-16	3865960	0.5	5E-10
RN-M-18	3993016	0.6	6E-10
RN-M-18	3993040	0.8	8E-10
RN-M-20	3865978	<0.3	<3E-10
RN-M-20	3866122	<0.3	<3E-10
RN-M-22	3992936	<0.3	<3E-10
RN-M-22	3992985	<0.3	<3E-10
RN-M-24	3992828	0.4	4E-10
RN-M-24	3992972	0.6	6E-10
RN-M-26	3992889	<0.3	<3E-10
RN-M-26	3992904	0.4	4E-10
RN-M-28	3992846	0.5	5E-10
RN-M-28	3992971	1.0	1.0E-09
RN-M-30	3865954	0.5	5E-10
RN-M-30	3866088	<0.3	<3E-10
RN-M-32	3992851	0.6	6E-10
RN-M-32	3993064	0.8	8E-10
RN-M-34	3992824	<0.3	<3E-10
RN-M-34	3993048	0.7	7E-10

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit).
[b] Scientific notation E-10 = "x 10^{-10}".

Table A-2. Radon Data for Monticello, Second Quarter 1996 (date installed: 04/02/1996; date removed: 07/02/1996) [a]

Sample Location	Detector Number	Radon Concentration (pCi/L)	Radon Concentration (μCi/mL) [b]
R-M-1-RN	4140696	0.5	5E-10
R-M-1-RN	4140697	1.0	1.0E-09
R-M-2-RN	4140618	0.8	8E-10
R-M-2-RN	4140620	0.5	5E-10
R-M-3-RN	4140558	0.9	9E-10
R-M-3-RN	4140574	0.9	9E-10
R-M-4-RN	4140568	<0.3	<3E-10
R-M-4-RN	4140673	0.4	4E-10
R-M-5-RN	4140561	0.7	7E-10
R-M-5-RN	4140616	1.0	1.0E-09
R-M-6-RN	4140617	0.5	5E-10
R-M-6-RN	4140644	0.6	6E-10
R-M-7-RN	4140571	0.4	4E-10
R-M-7-RN	4140615	0.5	5E-10
RN-M-04	4140661	1.2	1.2E-09
RN-M-04	4140709	1.2	1.2E-09
RN-M-06	4140717	1.4	1.4E-09
RN-M-06	4140723	1.5	1.5E-09
RN-M-07	4140569	4.4	4.4E-09
RN-M-07	4140739	3.5	3.5E-09
RN-M-10	4140557	0.4	4E-10
RN-M-10	4140559	0.4	4E-10
RN-M-11	4140659	<0.3	<3E-10
RN-M-11	4140677	<0.3	<3E-10

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit).
[b] Scientific notation E-10 = "x 10^{-10}".

Table A-2 (continued). Radon Data for Monticello, Second Quarter 1996 (date installed: 04/02/1996; date removed: 07/02/1996) [a]

Sample Location	Detector Number	Radon Concentration (pCi/L)	Radon Concentration (μCi/mL) [b]
RN-M-13	4140584	0.7	7E-10
RN-M-13	4140597	0.5	5E-10
RN-M-14	4140575	0.3	3E-10
RN-M-14	4140627	<0.3	<3E-10
RN-M-15	4140556	0.6	6E-10
RN-M-15	4140647	<0.3	<3E-10
RN-M-16	4140624	0.7	7E-10
RN-M-16	4140692	0.8	8E-10
RN-M-18	4140563	0.6	6E-10
RN-M-18	4140667	0.9	9E-10
RN-M-20	4140655	0.6	6E-10
RN-M-20	4140687	0.5	5E-10
RN-M-22	4140564	1.0	1.0E-09
RN-M-22	4140570	0.6	6E-10
RN-M-24	4140595	0.7	7E-10
RN-M-24	4140603	0.6	6E-10
RN-M-26	4140585	0.7	7E-10
RN-M-26	4140631	0.5	5E-10
RN-M-28	4140651	0.8	8E-10
RN-M-28	4140682	1.2	1.2E-09
RN-M-30	4140622	0.7	7E-10
RN-M-30	4140636	1.2	1.2E-09
RN-M-32	4140576	1.0	1.0E-09
RN-M-32	4140592	0.7	7E-10
RN-M-34	4140694	0.5	5E-10
RN-M-34	4140703	0.5	5E-10

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit).
[b] Scientific notation E-10 = "x 10^{-10}".

Table A-3. Radon Data for Monticello, Third Quarter 1996
(date installed: 07/02/1996; date removed: 10/03/1996)[a]

Sample Location	Detector Number	Radon Concentration (pCi/L)	Radon Concentration (μCi/mL)[b]
R-M-1-RN	4140433	0.5	5E-10
R-M-1-RN	4140547	<0.3	<3E-10
R-M-2-RN	4140424	0.7	7E-10
R-M-2-RN	4140594	0.4	4E-10
R-M-3-RN	4140429	0.8	8E-10
R-M-3-RN	4140593	0.7	7E-10
R-M-4-RN	4140423	0.6	6E-10
R-M-4-RN	4140680	0.4	4E-10
R-M-5-RN	4140430	0.4	4E-10
R-M-5-RN	4140566	0.7	7E-10
R-M-6-RN	4140537	0.5	5E-10
R-M-6-RN	4140718	0.5	5E-10
R-M-7-RN	4140412	0.3	3E-10
R-M-7-RN	4140551	0.3	3E-10
RN-M-04	4140438	1.0	1.0E-09
RN-M-04	4140526	1.0	1.0E-09
RN-M-06	4140415	1.4	1.4E-09
RN-M-06	4140449	1.4	1.4E-09
RN-M-07	4140483	11.0	1.1E-08
RN-M-07	4140504	7.7	7.7E-09
RN-M-10	4140401	0.4	4E-10
RN-M-10	4140469	<0.3	<3E-10
RN-M-11	4140431	<0.3	<3E-10
RN-M-11	4140445	<0.3	<3E-10
RN-M-13	4140481	<0.3	<3E-10
RN-M-13	4140544	<0.3	<3E-10

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit).
[b] Scientific notation E-10 = "x 10^{-10}".

Table A-3 (continued). Radon Data for Monticello, Third Quarter 1996 (date installed: 07/02/1996; date removed: 10/03/1996) [a]

Sample Location	Detector Number	Radon Concentration (pCi/L)	Radon Concentration (μCi/mL) [b]
RN-M-14	4140395	<0.3	<3E-10
RN-M-14	4140406	<0.3	<3E-10
RN-M-16	4140409	0.5	5E-10
RN-M-16	4140531	0.4	4E-10
RN-M-18	4140512	0.4	4E-10
RN-M-18	4140621	0.4	4E-10
RN-M-20	4140507	<0.3	<3E-10
RN-M-20	4140535	0.4	4E-10
RN-M-22	4140444	0.5	5E-10
RN-M-22	4140747	0.4	4E-10
RN-M-24	4140408	1.1	1.1E-09
RN-M-24	4140418	0.4	4E-10
RN-M-26	4140446	0.9	9E-10
RN-M-26	4140498	0.5	5E-10
RN-M-28	4140447	0.5	5E-10
RN-M-28	4140468	0.7	7E-10
RN-M-30	4140460	0.5	5E-10
RN-M-30	4140506	0.5	5E-10
RN-M-32	4140407	1.1	1.1E-09
RN-M-32	4140425	0.5	5E-10
RN-M-34	4140448	0.8	8E-10
RN-M-34	4140458	0.5	5E-10

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit).
[b] Scientific notation E-10 = "x 10^{-10}".

Table A-4. Radon Data for Monticello, Fourth Quarter 1996 (date installed: 10/03/1996; date removed: 01/07/1997)[a]

Sample Location	Detector Number	Radon Concentration (pCi/L)	Radon Concentration (μCi/mL)[b]
R-M-1-RN	4175264	0.5	5E-10
R-M-1-RN	4175291	0.5	5E-10
R-M-2-RN	4175436	0.5	5E-10
R-M-2-RN	4175439	0.3	3E-10
R-M-3-RN	4175430	0.6	6E-10
R-M-3-RN	4175462	0.6	6E-10
R-M-4-RN	4175433	0.6	6E-10
R-M-4-RN	4175476	<0.3	<3E-10
R-M-6-RN	4175277	0.3	3E-10
R-M-6-RN	4175418	<0.3	<3E-10
R-M-7-RN	4175414	<0.3	<3E-10
R-M-7-RN	4175474	<0.3	<3E-10
RN-M-04	4175539	0.9	9E-10
RN-M-04	4175616	0.6	6E-10
RN-M-06	4175274	1.3	1.3E-09
RN-M-06	4175499	0.8	8E-10
RN-M-07	4175279	3.0	3.0E-09
RN-M-07	4175567	2.8	2.8E-09
RN-M-10	4175382	<0.3	<3E-10
RN-M-10	4175504	0.3	3E-10
RN-M-11	4175276	<0.3	<3E-10
RN-M-11	4175464	<0.3	<3E-10
RN-M-13	4175477	<0.3	<3E-10
RN-M-13	4175583	<0.3	<3E-10
RN-M-14	4175342	<0.3	<3E-10
RN-M-14	4175407	<0.3	<3E-10

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit).
[b] Scientific notation E-10 = "x 10^{-10}".

Table A-4 (continued). Radon Data for Monticello, Fourth Quarter 1996 (date installed: 10/03/1996; date removed: 01/07/1997) [a]

Sample Location	Detector Number	Radon Concentration (pCi/L)	Radon Concentration (μCi/mL) [b]
RN-M-15	4175420	0.4	4E-10
RN-M-15	4175446	<0.3	<3E-10
RN-M-16	4175416	0.3	3E-10
RN-M-16	4175434	0.6	6E-10
RN-M-18	4175375	0.3	3E-10
RN-M-18	4175431	0.7	7E-10
RN-M-20	4175312	0.3	3E-10
RN-M-20	4175421	0.5	5E-10
RN-M-22	4175285	0.3	3E-10
RN-M-22	4175435	0.5	5E-10
RN-M-24	4175448	0.4	4E-10
RN-M-24	4175483	0.8	8E-10
RN-M-26	4175311	0.6	6E-10
RN-M-26	4175607	0.7	7E-10
RN-M-28	4175353	0.6	6E-10
RN-M-28	4175478	0.4	4E-10
RN-M-30	4175437	0.8	8E-10
RN-M-30	4175469	0.7	7E-10
RN-M-32	4175275	0.4	4E-10
RN-M-32	4175482	0.7	7E-10
RN-M-34	4175278	0.4	4E-10
RN-M-34	4175290	<0.3	<3E-10

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit).
[b] Scientific notation E-10 = "x 10^{-10}".

Table A-5. Suspended Particulates (PM_{10}) Data at Station AIR-M-1 during 1996

Sample Date	Ticket Number	Filter Number	Flow Rate (m^3/min) [a]	Sample Time (hours)	Weight (g/F) [b]	Concentration ($\mu g/m^3$)
01/02/1996	010296-01	6409537	0.937	24.08	0.0033	2
04/02/1996	040296-01	6409532	0.929	24.11	0.0241	18
04/08/1996	040896-01	6409528	0.935	24.02	0.0375	28
04/14/1996	041496-01	6409523	0.894	24.07	0.0045	3
04/20/1996	042096-01	6409518	0.906	24.07	0.0313	24
04/26/1996	042696-01	6409513	0.953	24.06	0.0251	18
05/02/1996	050296-01	6409509	0.944	24.05	0.0258	19
05/08/1996	050896-01	6409507	0.956	24.06	0.0373	27
05/14/1996	051496-01	6409502	0.944	24.04	0.0559	41
05/20/1996	052096-01	6418497	0.932	24.06	0.0308	23
05/26/1996	052696-01	6418492	0.885	24.06	0.0079	6
06/01/1996	060196-01	6418486	0.877	24.06	0.0198	16
06/07/1996	060796-01	6418482	0.912	24.12	0.0270	20
06/13/1996	061396-01	6418477	0.900	24.05	0.0344	26
06/19/1996	061996-01	6418472	0.912	24.07	0.0319	24
06/25/1996	062596-01	6418466	0.912	24.05	0.0382	29
07/01/1996	070196-01	6418461	0.897	24.06	0.0087	7
07/07/1996	070796-01	6418456	0.909	24.04	0.0226	17
07/13/1996	071396-01	6418451	0.910	24.10	0.0276	21
07/19/1996	071996-01	6418446	0.910	24.06	0.0128	10
07/26/1996	072696-01	6418441	0.910	24.03	0.0259	20
08/12/1996	081296-01	6418428	0.923	24.35	0.0446	33
08/18/1996	081896-01	6418423	0.923	23.75	0.0364	28
08/24/1996	082496-01	6418418	0.910	23.68	0.0131	10
08/30/1996	083096-01	6418413	0.923	23.70	0.0428	33
09/05/1996	090596-01	6418408	0.929	23.72	0.0132	10
09/11/1996	091196-01	6418403	0.929	23.72	0.0077	6

[a] Volumetric values of flow have been corrected to EPA standard temperature and pressure.
[b] Grams per filter.

Table A-5 (continued). Suspended Particulates (PM_{10}) Data at Station AIR-M-1 during 1996

Sample Date	Ticket Number	Filter Number	Flow Rate (m^3/min) [a]	Sample Time (hours)	Weight (g/F) [b]	Concentration ($\mu g/m^3$)
09/17/1996	091796-01	6560098	0.981	23.70	0.0053	4
09/23/1996	092396-01	6560093	0.929	23.68	0.0126	10
09/29/1996	092996-01	6560088	0.929	23.70	0.0136	10
10/05/1996	100596-01	6560083	0.928	23.70	0.0010	1
10/11/1996	101196-01	6560078	0.941	23.72	0.0216	16
10/17/1996	101796-01	6560073	0.941	23.72	0.0114	9
10/23/1996	102396-01	6560069	0.941	23.70	0.0105	8
10/29/1996	102996-01	6560065	0.941	23.72	0.0033	2
11/04/1996	110496-01	6560061	0.951	23.72	0.0042	3
11/10/1996	111096-01	6560057	0.951	23.70	0.0058	4
11/16/1996	111696-01	6560053	0.951	23.73	0.0087	6
11/22/1996	112296-01	6560049	0.951	23.72	0.0031	2
11/28/1996	112896-01	6560045	0.951	23.72	0.0075	6
12/04/1996	120496-01	6560041	0.985	23.70	0.0086	6
12/10/1996	121096-01	6560037	0.959	23.70	0.0030	2

[a] Volumetric values of flow have been corrected to EPA standard temperature and pressure.
[b] Grams per filter.

Table A-6. Suspended Particulates (PM_{10}) Data at Station AIR-M-3 during 1996

Sample Date	Ticket Number	Filter Number	Flow Rate (m^3/min) [a]	Sample Time (hours)	Weight (g/F) [b]	Concentration ($\mu g/m^3$)
04/08/1996	040896-03	6409527	0.863	23.48	0.0213	18
05/02/1996	050296-03	6409517	0.883	23.44	0.0179	14
05/08/1996	050896-03	6409506	0.923	23.45	0.0231	18
05/14/1996	051496-03	6409501	0.923	23.45	0.0355	27
05/20/1996	052096-03	6418496	0.910	23.45	0.0256	20
05/26/1996	052696-03	6418491	0.870	23.45	0.0112	9
06/01/1996	060196-03	6418486	0.902	23.44	0.0173	14
06/07/1996	060796-03	6418481	0.902	23.81	0.0256	20
06/13/1996	061396-03	6418476	0.894	23.81	0.0227	18
06/19/1996	061996-03	6418471	0.902	23.81	0.0241	19
06/25/1996	062596-03	6418465	0.915	23.81	0.0362	28
07/13/1996	071396-03	6418450	0.890	24.35	0.0292	22
07/19/1996	071996-03	6418445	0.904	23.95	0.0149	11
07/26/1996	072696-03	6418440	0.931	23.97	0.0225	17
07/31/1996	073196-03	6418435	0.917	23.96	0.0236	18
08/06/1996	080696-03	6418432	0.892	23.93	0.0224	17
08/12/1996	081296-03	6418427	0.906	23.93	0.0342	26
08/18/1996	081896-03	6418422	0.906	24.01	0.0286	22
08/24/1996	082496-03	6418417	0.858	23.96	0.0128	10
08/30/1996	083096-03	6418412	0.911	23.95	0.0318	24
09/05/1996	090596-03	6418407	0.890	23.93	0.0128	10
09/11/1996	091196-03	6418402	0.890	23.93	0.0135	11
09/17/1996	091796-03	6560097	0.890	23.98	0.0064	5
09/23/1996	092396-03	6560092	0.665	23.94	0.0198	21
09/29/1996	092996-03	6560087	0.916	23.93	0.0112	9
10/05/1996	100596-03	6560082	0.927	23.94	0.0076	6
10/11/1996	101196-03	6560077	0.927	23.93	0.0196	15
10/17/1996	101796-03	6560072	0.900	23.95	0.0124	10

[a] Volumetric values of flow have been corrected to EPA standard temperature and pressure.
[b] Grams per filter.

Table A-6 (continued). Suspended Particulates (PM_{10}) Data at Station AIR-M-3 during 1996

Sample Date	Ticket Number	Filter Number	Flow Rate (m^3/min) [a]	Sample Time (hours)	Weight (g/F) [b]	Concentration ($\mu g/m^3$)
10/23/1996	102396-03	6560068	0.927	23.95	0.0134	10
10/29/1996	102996-03	6560064	0.900	23.96	0.0057	4
11/04/1996	110496-03	6560060	0.909	23.96	0.0071	5
11/10/1996	111096-03	6560056	0.963	23.97	0.0141	10
11/16/1996	111696-03	6560052	0.909	24.04	0.0125	10
11/22/1996	112296-03	6560048	0.909	23.96	0.0049	4
11/28/1996	112896-03	6560044	0.882	23.97	0.0139	11
12/04/1996	120496-03	6560040	0.888	23.97	0.0119	9
12/10/1996	121096-03	6560036	0.888	23.96	0.0042	3

[a] Volumetric values of flow have been corrected to EPA standard temperature and pressure.
[b] Grams per filter.

Table A-7. Suspended Particulates (PM_{10}) Data at Station AIR-M-5 during 1996

Sample Date	Ticket Number	Filter Number	Flow Rate (m^3/min) [a]	Sample Time (hours)	Weight (g/F) [b]	Concentration ($\mu g/m^3$)
01/02/1996	010296-05	6409536	0.950	24.02	0.0121	9
04/08/1996	040896-05	6409526	0.951	24.00	0.0213	16
04/14/1996	041496-05	6409521	0.919	24.03	0.0020	2
04/20/1996	042096-05	6409516	0.951	24.45	0.0194	14
04/26/1996	042696-05	6409512	0.951	24.00	0.0211	15
05/02/1996	050296-05	6409508	0.944	24.02	0.0154	11
05/08/1996	050896-05	6409505	0.928	24.00	0.0170	13
05/14/1996	051496-05	6418500	0.960	24.00	0.0351	25
05/20/1996	052096-05	6418495	0.944	24.00	0.0449	33
05/26/1996	052696-05	6418490	0.912	24.00	0.0097	7
06/01/1996	060196-05	6418485	0.905	24.02	0.0176	13
06/07/1996	060796-05	6418480	0.921	23.98	0.0267	20
06/13/1996	061396-05	6418475	0.927	24.02	0.0236	18
06/19/1996	061996-05	6418470	0.946	23.98	0.0176	13
06/25/1996	062596-05	6418464	0.921	23.98	0.0337	25
07/01/1996	070196-05	6418459	0.902	24.00	0.0148	11
07/07/1996	070796-05	6418454	0.918	23.98	0.0203	15
07/13/1996	071396-05	6418449	0.905	24.03	0.0209	16
07/26/1996	072696-05	6418439	0.891	24.00	0.0233	18
07/31/1996	073196-05	6418434	0.891	24.00	0.0221	17
08/06/1996	080696-05	6418431	0.893	24.00	0.0140	11
08/12/1996	081296-05	6418426	0.907	24.00	0.0195	15
08/18/1996	081896-05	6418421	0.893	24.05	0.0270	21
08/24/1996	082496-05	6418416	0.893	24.00	0.0103	8
08/30/1996	083096-05	6418411	0.893	23.98	0.0329	26
09/05/1996	090596-05	6418406	0.898	24.00	0.0075	6
09/11/1996	091196-05	6418401	0.898	23.98	0.0058	4
09/17/1996	091796-05	6560096	0.913	24.00	0.0048	4

[a] Volumetric values of flow have been corrected to EPA standard temperature and pressure.
[b] Grams per filter.

Table A-7 (continued). Suspended Particulates (PM_{10}) Data at Station AIR-M-5 during 1996

Sample Date	Ticket Number	Filter Number	Flow Rate (m^3/min) [a]	Sample Time (hours)	Weight (g/F) [b]	Concentration ($\mu g/m^3$)
09/23/1996	092396-05	6560091	0.898	24.00	0.0183	14
09/29/1996	092996-05	6560086	0.913	23.98	0.0093	7
10/05/1996	100596-05	6560081	0.923	23.97	0.0095	7

[a] Volumetric values of flow have been corrected to EPA standard temperature and pressure.
[b] Grams per filter.

Table A-8. Suspended Particulates (PM_{10}) Data at Station AIR-M-6 during 1996

Sample Date	Ticket Number	Filter Number	Flow Rate (m^3/min) [a]	Sample Time (hours)	Weight (g/F) [b]	Concentration ($\mu g/m^3$)
01/02/1996	010296-06	6409535	0.940	24.09	0.0068	5
04/02/1996	040296-06	6409530	0.968	24.12	0.0181	13
04/08/1996	040896-06	6409525	0.983	24.09	0.0152	11
04/14/1996	041496-06	6409520	0.968	24.10	0.0062	4
04/20/1996	042096-06	6409515	0.983	24.34	0.0065	5
04/26/1996	042696-06	6409511	0.968	24.09	0.0067	5
05/08/1996	050896-06	6409504	0.960	24.09	0.0197	14
05/14/1996	051496-06	6418499	0.975	24.08	0.0299	21
05/20/1996	052096-06	6418494	0.960	24.08	0.0238	17
05/26/1996	052696-06	6418489	0.990	24.09	0.0100	7
06/01/1996	060196-06	6418484	0.936	24.08	0.0110	8
06/07/1996	060796-06	6418479	0.936	24.08	0.0194	14
06/13/1996	061396-06	6418474	0.921	24.08	0.0198	15
06/19/1996	061696-06	6418469	0.951	24.08	0.0149	11
06/25/1996	062596-06	6418463	0.945	24.35	0.0339	25
07/01/1996	070196-06	6418458	0.918	24.08	0.0112	8
07/07/1996	070796-06	6418453	0.918	24.07	0.0210	16
07/19/1996	071996-06	6418443	0.905	24.08	0.0122	9
07/26/1996	072696-06	6418438	0.891	24.07	0.0163	13
08/06/1996	080696-06	6418430	0.908	24.08	0.0118	9
08/12/1996	081296-06	6418425	0.908	24.07	0.0163	12
08/18/1996	081896-06	6418420	0.908	24.13	0.0247	19
08/24/1996	082496-06	6418415	0.908	24.08	0.0104	8
08/30/1996	083096-06	6418410	0.908	24.08	0.0239	18
09/05/1996	090596-06	6418405	0.899	24.10	0.0080	6
09/11/1996	091196-06	6560100	0.899	24.07	0.0047	4
09/17/1996	091796-06	6560095	0.929	24.08	0.0047	4
09/23/1996	092396-06	6560090	0.914	24.08	0.0140	11
09/29/1996	092996-06	6560085	0.914	24.08	0.0054	4

[a] Volumetric values of flow have been corrected to EPA standard temperature and pressure.
[b] Grams per filter.

Table A-8 (continued). Suspended Particulates (PM_{10}) Data at Station AIR-M-6 during 1996

Sample Date	Ticket Number	Filter Number	Flow Rate (m^3/min) [a]	Sample Time (hours)	Weight (g/F) [b]	Concentration ($\mu g/m^3$)
10/05/1996	100596-06	6560080	0.926	24.08	0.0052	4
10/11/1996	101196-06	6560075	0.941	24.08	0.0126	9
10/17/1996	101796-06	6560071	0.926	24.09	0.0070	5
10/23/1996	102396-06	6560067	0.926	23.68	0.0066	5
10/29/1996	102996-06	6560063	0.926	24.50	0.0077	6
11/04/1996	110496-06	6560059	0.921	24.07	0.0044	3
11/10/1996	111096-06	6560055	0.921	24.08	0.0072	5
11/16/1996	111696-06	6560051	0.921	24.11	0.0063	5
11/22/1996	112296-06	6560047	0.921	24.12	0.0047	4
11/28/1996	112896-06	6560043	0.921	24.08	0.0077	6
12/04/1996	120496-06	6560039	0.928	24.11	0.0096	7
12/10/1996	121096-06	6560035	0.898	24.08	0.0026	2

[a] Volumetric values of flow have been corrected to EPA standard temperature and pressure.
[b] Grams per filter.

Table A-9. Suspended Particulates (PM_{10}) Data at Station AIR-M-7 during 1996

Sample Date	Ticket Number	Filter Number	Flow Rate (m^3/min) [a]	Sample Time (hours)	Weight (g/F) [b]	Concentration ($\mu g/m^3$)
01/02/1996	010296-07	6409534	0.929	23.99	0.0000	<1
04/02/1996	040296-07	6409529	0.927	23.91	0.0099	7
04/08/1996	040896-07	6409524	0.942	24.04	0.0151	11
04/14/1996	041496-07	6409519	0.927	24.07	0.0004	<1
04/20/1996	042096-07	6409514	0.927	24.06	0.0117	9
04/26/1996	042696-07	6409510	0.942	24.07	0.0100	7
05/08/1996	050896-07	6409503	0.919	24.00	0.0136	10
05/14/1996	051496-07	6418498	0.919	24.03	0.0316	24
05/20/1996	052096-07	6418493	0.934	24.06	0.0258	19
05/26/1996	052696-07	6418488	0.876	24.06	0.0057	5
06/01/1996	060196-07	6418483	0.912	24.06	0.0137	10
06/07/1996	060796-07	6418478	0.912	24.07	0.0185	14
06/13/1996	061396-07	6418473	0.898	24.08	0.0191	15
06/19/1996	061996-07	6418468	0.912	24.10	0.0119	9
06/25/1996	062596-07	6418462	0.898	24.06	0.0213	16
07/01/1996	070196-07	6418457	0.909	24.08	0.0073	6
07/07/1996	070796-07	6418452	0.895	24.09	0.0231	18
07/13/1996	071396-07	6418447	0.910	24.06	0.0248	19
07/19/1996	071996-07	6418442	0.910	24.09	0.0127	10
07/26/1996	072696-07	6418437	0.910	24.09	0.0189	14
07/31/1996	073196-07	6418433	0.772	24.07	0.0077	7
08/06/1996	080696-07	6418429	0.912	24.09	0.0149	11
08/12/1996	081296-07	6418424	0.912	24.11	0.0151	11
08/18/1996	081896-07	6418419	0.896	24.10	0.0214	17
08/24/1996	082496-07	6418414	0.880	24.07	0.0102	8
08/30/1996	083096-07	6418409	0.912	24.10	0.0279	21
09/05/1996	090596-07	6418404	0.901	24.07	0.0115	9
09/11/1996	091196-07	6560099	0.917	24.06	0.0050	4

[a] Volumetric values of flow have been corrected to EPA standard temperature and pressure.
[b] Grams per filter.

Table A-9 (continued). Suspended Particulates (PM_{10}) Data at Station AIR-M-7 during 1996

Sample Date	Ticket Number	Filter Number	Flow Rate (m^3/min) [a]	Sample Time (hours)	Weight (g/F) [b]	Concentration ($\mu g/m^3$)
09/17/1996	091796-07	6560094	0.917	24.10	0.0020	2
09/23/1996	092396-07	6560089	0.917	24.06	0.0075	6
09/29/1996	092996-07	6560084	0.917	24.07	0.0102	8
10/05/1996	100596-07	6560079	0.927	23.96	0.0042	3
10/11/1996	101196-07	6560074	0.895	24.06	0.0164	13
10/17/1996	101796-07	6560070	0.927	24.09	0.0095	7
10/23/1996	102396-07	6560066	0.927	24.07	0.0044	3
10/29/1996	102996-07	6560062	0.927	24.09	0.0038	3
11/04/1996	110496-07	6560058	0.936	24.05	0.0040	3
11/10/1996	111096-07	6560054	0.936	24.09	0.0052	4
11/16/1996	111696-07	6560050	0.936	24.13	0.0051	4
11/22/1996	112296-07	6560046	0.936	24.11	0.0028	2
11/28/1996	112896-07	6560042	0.936	24.09	0.0071	5
12/04/1996	120496-07	6560038	0.941	24.10	0.0050	4

[a] Volumetric values of flow have been corrected to EPA standard temperature and pressure.
[b] Grams per filter.

Table A-10. Radioparticulate Air Sample Results for 1996

Sample Location	Sample Date	Flow Rate (L/h) [b]	Sample Time (hours)	Radium-226		Thorium-230			Uranium			Polonium-210	
				(pCi/F) [c]	(μCi/mL)	(pCi/F)	(μCi/mL)	(pg/mL) [d]	(μg/F) [e]	(μg/m3)	(μCi/mL) [f]	(pCi/F)	(μCi/mL)
R-M-1-AIR	04/1996	3600	720.0	1.09	4.2E-16	0.75	2.9E-16	1.5E-08	~1.2	~4.6E-04	~3.2E-16	3.71	1.4E-15
R-M-1-AIR	05/1996	3600	721.0	0.49	1.9E-16	0.53	2.0E-16	1.0E-08	~1.2	~4.6E-04	~3.2E-16	8.80	3.4E-15
R-M-1-AIR	06/1996	3600	769.0	0.37	1.3E-16	0.38	1.4E-16	7.2E-09	~1.0	~3.6E-04	~2.5E-16	11.49	4.2E-15
R-M-1-AIR	07/1996	3600	670.0	0.35	1.5E-16	0.32	1.3E-16	6.7E-09	~0.74	~3.1E-04	~2.1E-16	6.66	2.8E-15
R-M-1-AIR	08/1996	3600	840.0	1.02	3.4E-16	0.33	1.1E-16	5.7E-09	~1.1	~3.6E-04	~2.5E-16	7.82	2.6E-15
R-M-1-AIR	09/1996	3600	693.0	1.13	4.5E-16	0.34	1.4E-16	7.2E-09	0.82	3.3E-04	2.3E-16	5.05	2.0E-15
R-M-1-AIR	10/1996	3600	841.0	0.72	2.4E-16	0.29	9.6E-17	4.9E-09	~0.81	~2.7E-04	~1.9E-16	10.78	3.6E-15
R-M-1-AIR	11/1996	3600	627.0	0.45	2.0E-16	0.26	1.2E-16	6.2E-09	~0.53	~2.3E-04	~1.6E-16	11.14	4.9E-15
R-M-1-AIR	12/1996	3600	214.0	<1.04	<1.3E-15	0.11	1.4E-16	7.2E-09	~0.24	~3.1E-04	~2.1E-16	0.94	1.2E-15
R-M-2-AIR	04/1996	3600	610.0	0.77	3.5E-16	0.17	7.7E-17	4.0E-09	~0.15	~6.8E-05	~4.7E-17	0.28	1.3E-16
R-M-2-AIR	05/1996	3600	686.0	0.59	2.4E-16	0.34	1.4E-16	7.2E-09	~1.1	~4.5E-04	~3.1E-16	5.84	2.4E-15
R-M-2-AIR	06/1996	3600	668.0	0.52	2.2E-16	0.38	1.6E-16	8.2E-09	~0.90	~3.7E-04	~2.5E-16	7.73	3.2E-15
R-M-2-AIR	07/1996	3600	458.0	0.27	1.6E-16	0.17	1.0E-16	5.2E-09	~0.37	~2.2E-04	~1.5E-16	1.18	7.2E-16
R-M-2-AIR	08/1996	3600	840.0	0.73	2.4E-16	0.37	1.2E-16	6.2E-09	~1.3	~4.3E-04	~3.0E-16	5.87	1.9E-15
R-M-2-AIR	09/1996	3600	600.0	0.47	2.2E-16	0.25	1.2E-16	6.2E-09	0.81	3.8E-04	2.6E-16	3.66	1.7E-15
R-M-2-AIR	10/1996	3600	581.0	0.50	2.4E-16	0.29	1.4E-16	7.2E-09	~0.80	~3.8E-04	~2.6E-16	7.91	3.8E-15
R-M-2-AIR	11/1996	3600	549.0	0.84	4.3E-16	0.08	4.0E-17	2.1E-09	~0.58	~2.9E-04	~2.0E-16	8.38	4.2E-15
R-M-2-AIR	12/1996	3600	211.0	0.53	7.0E-16	0.10	1.3E-16	6.7E-09	~0.29	~3.8E-04	~2.6E-16	1.82	2.4E-15

[a] A "~" indicates an approximate value (the value was outside the limits for which the instument was calibrated.
[b] L/h = liters per hour.
[c] pCi/F = picocuries per filter.
[d] pg/mL = picograms per milliliter. The conversion of thorium-230 concentrations between microcuries and picograms assumed equilibrium and an activity of 0.0194 μCi/μg.
[e] μg/F = micrograms per filter.
[f] The conversion of uranium concentrations between microcuries per milliliter and micrograms per cubic meter assumed equilibrium and an activity of 0.687 pCi/μg.

Table A-10 (continued). Radioparticulate Air Sample Results for 1996

Sample Location	Sample Date	Flow Rate (L/h) [b]	Sample Time (hours)	Radium-226		Thorium-230			Uranium			Polonium-210	
				(pCi/F) [c]	(µCi/mL)	(pCi/F)	(µCi/mL)	(pg/mL) [d]	(µg/F) [e]	(µg/m3)	(µCi/mL) [f]	(pCi/F)	(µCi/mL)
R-M-3-AIR	04/1996	3600	720.0	0.49	1.9E-16	0.35	1.4E-16	7.2E-09	~0.84	~3.2E-04	~2.2E-16	1.67	6.4E-16
R-M-3-AIR	05/1996	3600	721.0	0.38	1.5E-16	0.27	1.0E-16	5.2E-09	~0.77	~3.0E-04	~2.1E-16	7.26	2.8E-15
R-M-3-AIR	06/1996	3600	769.0	0.42	1.5E-16	0.40	1.4E-16	7.2E-09	~0.98	~3.5E-04	~2.4E-16	8.46	3.1E-15
R-M-3-AIR	07/1996	3600	670.0	0.26	1.1E-16	0.24	1.0E-16	5.2E-09	~0.59	~2.4E-04	~1.6E-16	4.53	1.9E-15
R-M-3-AIR	08/1996	3600	840.0	0.65	2.1E-16	0.48	1.6E-16	8.2E-09	~0.94	~3.1E-04	~2.1E-16	5.35	1.8E-15
R-M-3-AIR	09/1996	3600	694.0	0.75	3.0E-16	0.39	1.6E-16	8.2E-09	0.84	3.4E-04	2.3E-16	3.76	1.5E-15
R-M-3-AIR	10/1996	3600	841.0	0.29	9.6E-17	0.32	1.1E-16	5.7E-09	~0.78	~2.6E-04	~1.8E-16	8.13	2.7E-15
R-M-3-AIR	11/1996	3600	603.0	0.91	4.2E-16	0.14	6.4E-17	3.3E-09	~0.57	~2.6E-04	~1.8E-16	7.35	3.4E-15
R-M-3-AIR	12/1996	3600	216.0	<0.71	<9.1E-16	0.12	1.5E-16	7.7E-09	~0.27	~3.5E-04	~2.4E-16	1.48	1.9E-15
R-M-5-AIR	04/1996	3600	719.0	0.58	2.2E-16	0.39	1.5E-16	7.7E-09	~0.61	~2.4E-04	~1.6E-16	0.88	3.4E-16
R-M-5-AIR	05/1996	3600	720.0	0.43	1.7E-16	0.36	1.4E-16	7.2E-09	~0.89	~3.4E-04	~2.3E-16	8.24	3.2E-15
R-M-5-AIR	06/1996	3600	769.0	0.59	2.1E-16	0.35	1.3E-16	6.7E-09	~1.2	~4.3E-04	~3.0E-16	10.74	3.9E-15
R-M-5-AIR	07/1996	3600	669.0	0.30	1.2E-16	0.29	1.2E-16	6.2E-09	~0.72	~3.0E-04	~2.1E-16	6.48	2.7E-15
R-M-5-AIR	08/1096	3600	840.0	0.49	1.6E-16	<0.20	<6.6E-17	<3.4E-09	~0.59	~2.0E-04	~1.4E-16	3.97	1.3E-15
R-M-5-AIR	09/1996	3600	626.0	0.43	1.9E-16	0.27	1.2E-16	6.2E-09	0.59	2.6E-04	1.8E-16	3.14	1.4E-15
R-M-5-AIR	10/1996	3600	144.0	0.18	3.5E-16	0.06	1.2E-16	6.2E-09	~0.22	~4.2E-04	~2.9E-16	2.17	4.2E-15

[a] A "~" indicates an approximate value (the value was outside the limits for which the instument was calibrated.
[b] L/h = liters per hour.
[c] pCi/F = picocuries per filter.
[d] pg/mL = picograms per milliliter. The conversion of thorium-230 concentrations between microcuries and picograms assumed equilibrium and an activity of 0.0194 µCi/µg.
[e] µg/F = micrograms per filter.
[f] The conversion of uranium concentrations between microcuries per milliliter and micrograms per cubic meter assumed equilibrium and an activity of 0.687 pCi/µg.

Table A-10 (continued). Radioparticulate Air Sample Results for 1996

Sample Location	Sample Date	Flow Rate (L/h) [b]	Sample Time (hours)	Radium-226		Thorium-230			Uranium			Polonium-210	
				(pCi/F) [c]	(μCi/mL)	(pCi/F)	(μCi/mL)	(pg/mL) [d]	(μg/F) [e]	(μg/m3)	(μCi/mL) [f]	(pCi/F)	(μCi/mL)
R-M-6-AIR	04/1996	3600	648.0	0.55	2.4E-16	0.24	1.0E-16	5.2E-09	~0.50	~2.1E-04	~1.4E-16	1.76	7.5E-16
R-M-6-AIR	05/1996	3600	720.0	0.28	1.1E-16	0.29	1.1E-16	5.7E-09	~0.80	~3.1E-04	~2.1E-16	6.86	2.6E-15
R-M-6-AIR	06/1996	3600	770.0	0.30	1.1E-16	0.25	9.0E-17	4.6E-09	~0.62	~2.2E-04	~1.5E-16	7.16	2.6E-15
R-M-6-AIR	07/1996	3600	670.0	<0.22	<9.1E-17	0.35	1.5E-16	7.7E-09	~0.60	~2.5E-04	~1.7E-16	6.08	2.5E-15
R-M-6-AIR	08/1996	3600	840.0	0.46	1.5E-16	<0.45	<1.5E-16	<7.7E-09	~0.97	~3.2E-04	~2.2E-16	7.22	2.4E-15
R-M-6-AIR	09/1996	3600	694.0	0.51	2.0E-16	0.29	1.2E-16	6.2E-09	0.73	2.9E-04	2.0E-16	4.46	1.8E-15
R-M-6-AIR	10/1996	3600	839.0	<0.21	<7.0E-17	0.24	7.9E-17	4.1E-09	~0.82	~2.7E-04	~1.9E-16	8.90	2.9E-15
R-M-6-AIR	11/1996	3600	603.0	0.79	3.6E-16	0.12	5.5E-17	2.8E-09	~0.56	~2.6E-04	~1.8E-16	8.40	3.9E-15
R-M-6-AIR	12/1996	3600	218.0	<0.50	<6.4E-16	0.12	1.5E-16	7.7E-09	~0.26	~3.3E-04	~2.3E-16	1.55	2.0E-15
R-M-7-AIR	04/1996	3600	721.0	0.54	2.1E-16	0.37	1.4E-16	7.2E-09	~0.61	~2.4E-04	~1.6E-16	3.11	1.2E-15
R-M-7-AIR	05/1996	3600	720.0	0.45	1.7E-16	0.28	1.1E-16	5.7E-09	~0.65	~2.5E-04	~1.7E-16	6.88	2.7E-15
R-M-7-AIR	06/1996	3600	770.0	0.42	1.5E-16	0.34	1.2E-16	6.2E-09	~0.80	~2.9E-04	~2.0E-16	10.89	3.9E-15
R-M-7-AIR	07/1996	3600	668.0	0.23	9.6E-17	0.23	9.6E-17	4.9E-09	~0.55	~2.3E-04	~1.6E-16	5.56	2.3E-15
R-M-7-AIR	08/1996	3600	840.0	0.49	1.6E-16	<0.28	<9.3E-17	<4.8E-09	~0.85	~2.8E-04	~1.9E-16	7.25	2.4E-15
R-M-7-AIR	09/1996	3600	597.0	0.37	1.7E-16	0.19	8.8E-17	4.5E-09	0.57	2.7E-04	1.9E-16	3.54	1.6E-15
R-M-7-AIR	10/1996	3600	838.0	0.32	1.1E-16	0.21	7.0E-17	3.6E-09	~0.78	~2.6E-04	~1.8E-16	8.65	2.9E-15
R-M-7-AIR	11/1996	3600	606.0	<1.02	<4.7E-16	0.16	7.3E-17	3.8E-09	~0.50	~2.3E-04	~1.6E-16	9.11	4.2E-15
R-M-7-AIR	12/1996	3600	231.0	0.53	6.4E-16	0.09	1.1E-16	5.7E-09	~0.26	~3.1E-04	~2.1E-16	1.89	2.3E-15

[a] A "~" indicates an approximate value (the value was outside the limits for which the instument was calibrated.
[b] L/h = liters per hour.
[c] pCi/F = picocuries per filter.
[d] pg/mL = picograms per milliliter. The conversion of thorium-230 concentrations between microcuries and picograms assumed equilibrium and an activity of 0.0194 μCi/μg.
[e] μg/F = micrograms per filter.
[f] The conversion of uranium concentrations between microcuries per milliliter and micrograms per cubic meter assumed equilibrium and an activity of 0.687 pCi/μg.

Table A-11. Environmental Radiation Exposure Data for Monticello, First Quarter 1996

Report Number	Report Date	Date Installed	Date Removed	Days Exposed
8052-20	05/14/1996	01/03/1996	04/02/1996	90

TLD ID	Field Location	Exposure for Quarter (mrem)	Daily Exposure (mrem)	Approximate Annual Exposure (mrem)
GJ-28	R-M-1-TLD	25.3	0.3	103
GJ-26	R-M-2-TLD	23.5	0.3	95
GJ-1	R-M-3-TLD	24.0	0.3	97
GJ-37	R-M-3-TLD [a]	26.5	0.3	107
GJ-6	R-M-4-TLD	31.2	0.3	127
GJ-40	R-M-5-TLD	24.4	0.3	99
GJ-22	R-M-5-TLD [a]	32.2	0.4	131
GJ-12	R-M-6-TLD	21.3	0.2	86
GJ-35	R-M-7-TLD	17.1	0.2	69
GJ-13	R-M-7-TLD [a]	18.4	0.2	75
SP-1	R-M-7-TLD [a]	20.5	0.2	83
SP-2	R-M-7-TLD [a]	20.2	0.2	82
GJ-5	TLD-M-02	30.2	0.3	122
GJ-38	TLD-M-03	26.6	0.3	108
GJ-36	TLD-M-03 [a]	24.1	0.3	98
GJ-4	TLD-M-06	148.8	1.7	603
GJ-18	TLD-M-07	33.2	0.4	135
GJ-11	TLD-M-08	21.9	0.2	89
GJ-20	TLD-M-09	28.4	0.3	115
G-23	TLD-M-10	30.5	0.3	124
GJ-27	TLD-M-11	50.2	0.6	204
GJ-10	TLD-M-16	24.2	0.3	98
GJ-33	TLD-M-18	27.0	0.3	110
GJ-29	TLD-M-20	23.9	0.3	97

[a] Duplicate sample.

Table A-11 (continued). Environmental Radiation Exposure Data for Monticello, First Quarter 1996

Report Number	Report Date	Date Installed	Date Removed	Days Exposed
8052-20	05/14/1996	01/03/1996	04/02/1996	90

TLD ID	Field Location	Exposure for Quarter (mrem)	Daily Exposure (mrem)	Approximate Annual Exposure (mrem)
GJ-7	TLD-M-22	25.4	0.3	103
GJ-32	TLD-M-24	29.2	0.3	118
GJ-34	TLD-M-26	25.5	0.3	103
GJ-8	TLD-M-28	31.1	0.3	126
GJ-25	TLD-M-30	25.5	0.3	103
GJ-14	TLD-M-32	23.8	0.3	97
GJ-16	TLD-M-34	24.5	0.3	99

Table A-12. Environmental Radiation Exposure Data for Monticello, Second Quarter 1996

Report Number	Report Date	Date Installed	Date Removed	Days Exposed
8052-21	08/02/1996	04/02/1996	07/02/1996	91

TLD ID	Field Location	Exposure for Quarter (mrem)	Daily Exposure (mrem)	Approximate Annual Exposure (mrem)
GJ-25	R-M-1-TLD	23.7	0.3	95
GJ-24	R-M-2-TLD	24.0	0.3	96
GJ-16	R-M-3-TLD	26.6	0.3	107
GJ-35	R-M-3-TLD [a]	28.9	0.3	116
GJ-33	R-M-4-TLD	29.0	0.3	116
GJ-3	R-M-5-TLD	33.1	0.4	133
GJ-15	R-M-5-TLD [a]	28.2	0.3	113
GJ-22	R-M-6-TLD	26.1	0.3	105
GJ-14	R-M-6-TLD [a]	24.7	0.3	99
GJ-9	R-M-7-TLD	20.0	0.2	80
GJ-39	R-M-7-TLD [a]	21.6	0.2	87
GJ-18	TLD-M-02	25.9	0.3	104
GJ-10	TLD-M-03	23.6	0.3	95
GJ-8	TLD-M-06	162.8	1.8	653
GJ-8	TLD-M-06	162.8	1.8	653
GJ-21	TLD-M-06 [a]	172.5	1.9	692
GJ-21	TLD-M-06 [a]	172.5	1.9	692
GJ-7	TLD-M-07	34.6	0.4	139
GJ-4	TLD-M-08	27.2	0.3	109
GJ-23	TLD-M-09	27.8	0.3	112
GJ-17	TLD-M-10	23.6	0.3	95
GJ-28	TLD-M-11	54.1	0.6	217
GJ-28	TLD-M-11	54.1	0.6	217
SP-1	TLD-M-16	27.0	0.3	108
GJ-1	TLD-M-16 [a]	23.6	0.3	95

[a] Duplicate sample.

Table A-12 (continued). Environmental Radiation Exposure Data for Monticello, Second Quarter 1996

Report Number	Report Date	Date Installed	Date Removed	Days Exposed
8052-21	08/02/1996	04/02/1996	07/02/1996	91

TLD ID	Field Location	Exposure for Quarter (mrem)	Daily Exposure (mrem)	Approximate Annual Exposure (mrem)
GJ-12	TLD-M-18	26.1	0.3	105
GJ-31	TLD-M-20	24.8	0.3	99
GJ-34	TLD-M-22	27.0	0.3	108
GJ-29	TLD-M-24	25.8	0.3	103
GJ-6	TLD-M-26	26.9	0.3	108
GJ-11	TLD-M-28	25.7	0.3	103
GJ-40	TLD-M-30	26.5	0.3	106
GJ-32	TLD-M-32	27.5	0.3	110
GJ-20	TLD-M-34	29.5	0.3	118

[a] Duplicate sample.

Table A-13. Environmental Radiation Exposure Data for Monticello, Third Quarter 1996

Report Number	Report Date	Date Installed	Date Removed	Days Exposed
8052-22	10/31/1996	07/02/1996	10/03/1996	93

TLD ID	Field Location	Exposure for Quarter (mrem)	Daily Exposure (mrem)	Approximate Annual Exposure (mrem)
GJ-26	R-M-1-TLD	28.5	0.3	112
GJ-32	R-M-2-TLD	31.1	0.3	122
GJ-8	R-M-3-TLD	36.9	0.4	145
GJ-7	R-M-4-TLD	32.8	0.4	129
GJ-6	R-M-5-TLD	36.5	0.4	143
GJ-1	R-M-6-TLD	26.2	0.3	103
GJ-3	R-M-7-TLD	26.0	0.3	102
GJ-27	R-M-7-TLD [a]	23.7	0.3	93
GJ-2	TLD-M-02	27.4	0.3	108
GJ-23	TLD-M-02 [a]	27.7	0.3	109
GJ-21	TLD-M-03	29.7	0.3	117
GJ-39	TLD-M-03 [a]	27.9	0.3	110
GJ-5	TLD-M-06	187.7	2.0	737
GJ-9	TLD-M-06 [a]	173.3	1.9	680
GJ-11	TLD-M-08	24.5	0.3	96
GJ-36	TLD-M-09	31.4	0.3	123
GJ-38	TLD-M-10	39.1	0.4	153
GJ-40	TLD-M-11	56.9	0.6	223
GJ-13	TLD-M-16	28.1	0.3	110
GJ-10	TLD-M-20	28.1	0.3	110
GJ-33	TLD-M-24	30.3	0.3	119
GJ-34	TLD-M-26	29.4	0.3	115
GJ-24	TLD-M-28	29.9	0.3	117
GJ-30	TLD-M-30	29.4	0.3	115
GJ-37	TLD-M-32	31.6	0.3	124
GJ-28	TLD-M-34	29.5	0.3	116

[a] Duplicate sample.

Table A-14. Environmental Radiation Exposure Data for Monticello, Fourth Quarter 1996

Report Number	Report Date	Date Installed	Date Removed	Days Exposed
8052-23	01/31/1997	10/03/1996	01/07/1997	96

TLD ID	Field Location	Exposure for Quarter (mrem)	Daily Exposure (mrem)	Approximate Annual Exposure (mrem)
GJ-13	R-M-1-TLD	32.4	0.3	123
GJ-37	R-M-2-TLD	31.1	0.3	118
GJ-23	R-M-3-TLD	34.0	0.4	129
GJ-1	R-M-3-TLD [a]	32.4	0.3	123
GJ-36	R-M-4-TLD	37.4	0.4	142
GJ-11	R-M-6-TLD	28.8	0.3	110
GJ-27	R-M-7-TLD	29.6	0.3	113
GJ-14	R-M-7-TLD [a]	26.9	0.3	102
GJ-12	TLD-M-02	30.1	0.3	114
GJ-17	TLD-M-03	30.9	0.3	117
GJ-32	TLD-M-06	156.7	1.6	596
GJ-31	TLD-M-06 [a]	151.0	1.6	574
GJ-22	TLD-M-07	41.1	0.4	156
GJ-20	TLD-M-08	32.4	0.3	123
GJ-29	TLD-M-09	31.2	0.3	119
GJ-33	TLD-M-10	36.3	0.4	138
GJ-19	TLD-M-11	58.1	0.6	221
GJ-18	TLD-M-16	31.9	0.3	121
GJ-5	TLD-M-18	37.4	0.4	142
GJ-40	TLD-M-20	33.1	0.3	126
GJ-34	TLD-M-22	31.6	0.3	120

[a] Duplicate sample.

Table A-14 (continued). Environmental Radiation Exposure Data for Monticello, Fourth Quarter 1996

Report Number	Report Date	Date Installed	Date Removed	Days Exposed
8052-23	01/31/1997	10/03/1996	01/07/1997	96

TLD ID	Field Location	Exposure for Quarter (mrem)	Daily Exposure (mrem)	Approximate Annual Exposure (mrem)
GJ-7	TLD-M-24	34.0	0.4	129
GJ-39	TLD-M-26	34.8	0.4	132
GJ-28	TLD-M-28	29.6	0.3	113
GJ-15	TLD-M-30	28.7	0.3	109
GJ-16	TLD-M-32	29.2	0.3	111
GJ-21	TLD-M-34	34.4	0.4	131

[a] Duplicate sample.

Table A-15. Surface-Water Chemistry Data Collected At and Near the MMTS During 1996[a]

Sample Location	Ticket Numbers	Sample Date	Al (μg/L)	Al[b] (μg/L)	Alkalinity (as $CaCO_3$) (ppm)	Alpha (pCi/L)[c]	As (μg/L)	As[b] (μg/L)	Beta (pCi/L)[c]	Ca (μg/L)
14SW96-01	NBF-435,NBF-436	06/10/1996	<31.2	381	287	<6.76	-0.86	1.8	6.09	117000
15SW96-01	NBF-437,NBF-438	06/10/1996	<31.2	133	226	<5.97	1.6	2.1	5.18	105000
16SW96-01	NBF-439,NBF-440	06/10/1996	<31.2	<31.2	216	<5.96	1.6	1.1	<4.53	104000
17SW96-01	NBF-441,NBF-442	06/11/1996	<31.2	<31.2	229	78.11	1.8	2.0	16.04	81500
18SW96-01	NBD-490,NBD-491	06/11/1996	<31.2	912	183	60.63	3.8	4.8	21.24	208000
19SW96-01	NBF-443,NBF-444	06/11/1996	<31.2	346	194	<7.10	4.0	5.1	<8.68	190000
20SW96-01	NBD-492,NBD-493	06/11/1996	<31.2	114	178	119.23	3.8	4.4	33.33	212000
21SW96-01	NBF-421,NBF-422	06/11/1996	<31.2	712	226	166.65	2.0	2.2	40.07	272000
	NBF-423,NBF-424	06/11/1996	<31.2	942	No Data	147.95	1.6	1.9	44.02	270000
22SW96-01	NBF-419,NBF-420	06/11/1996	<31.2	320	208	176.10	2.5	2.9	37.22	259000
23SW96-01	NBF-449,NBF-450	06/11/1996	<31.2	526	228	149.15	2.5	2.7	38.98	255000
24SW96-01	NBF-447,NBF-448	06/11/1996	<31.2	331	208	144.19	2.6	3.1	30.30	256000
25SW96-01	NBF-445,NBF-446	06/11/1996	<31.2	350	234	156.04	2.7	3.4	32.86	258000
Montezuma Canyon	NBC-640,NBC-764	10/23/1996	1590	<6.0	308	21.53	4.1	3.4	20.03	194000
	NBC-641,NBC-765	10/23/1996	1670	<6.0	No Data	<14.90	4.3	3.3	21.39	194000
SW92-01	NBD-108	06/26/1996	562	No Data	No Data	<13.14	-2.5	No Data	<9.16	322000
	NBD-109	06/26/1996	724	No Data	No Data	<13.03	-1.4	No Data	<9.18	321000
	NBC-626,NBC-751	10/21/1996	-49.7	<6.0	239	<12.64	<1.1	<1.0	<16.43	275000
SW92-02	NBC-627,NBC-752	10/21/1996	246	-9.0	246	<4.80	<1.1	<1.0	<5.78	90800
SW92-03	NBC-628,NBC-753	10/21/1996	1300	<6.0	216	8.13	<1.1	<1.0	<9.64	160000
SW92-04	NBC-630,NBC-755	10/22/1996	-44.1	<6.0	344	23.35	<1.1	<1.0	<19.33	324000
SW92-05	NBF-171,NBF-172	04/10/1996	287	<9.0	2267	<27.82[d]	<0.44	<0.44	<48.64	324000
	NBC-631,NBC-756	10/22/1996	90.3	<6.0	321	<15.14	<1.1	<1.0	<19.25	335000
SW92-06	NBC-633,NBC-758	10/22/1996	493	<6.0	258	56.37	<1.1	<1.0	<23.41	319000
SW92-07	NBF-164,NBF-165	04/09/1996	289	<9.0	2272	-84.82	<0.44	<0.44	<50.29	301000
	NBD-103	06/26/1996	-132	No Data	No Data	207.08	-2.0	No Data	45.50	243000
	NBC-636,NBC-760	10/23/1996	166	<6.0	293	103.38	<1.1	<1.0	36.19	293000
SW92-08	NBC-637,NBC-761	10/23/1996	-28.1	<6.0	263	92.51	1.2	<1.0	37.50	258000

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "-" indicates an estimated value. An "R" indicates that the result was determined unusable through data validation.
[b] Sample was filtered in the field.
[c] The values listed multiplied by 10^{-9} will result in microcuries per milliliter.
[d] Estimated.

Table A-15 (continued). Surface-Water Chemistry Data Collected At and Near the MMTS During 1996[a]

Sample Location	Ticket Numbers	Sample Date	Al (μg/L)	Al[b] (μg/L)	Alkalinity (as $CaCO_3$) (ppm)	Alpha (pCi/L)[c]	As (μg/L)	As[b] (μg/L)	Beta (pCi/L)[c]	Ca (μg/L)
SW92-09	NBC-638,NBC-762	10/23/1996	-55.2	<6.0	228	107.54	1.3	1.0	44.06	257000
SW94-01	NBD-867,NBF-160	02/16/1996	947	<12.0	262	-130.49	<1.1	<1.0	<49.12	293000
	NBD-868,NBF-161	02/16/1996	838	<12.0	No Data	-121.94	<1.1	<1.0	<49.01	294000
	NBF-162,NBF-163	04/09/1996	482	<9.0	1983	-136.35	<0.44	<0.44	<41.68	269000
	NBD-102	06/26/1996	-219	No Data	No Data	152.86	-2.0	No Data	33.48	241000
	NBC-639,NBC-763	10/23/1996	56.4	<6.0	No Data	104.05	1.1	1.1	36.03	257000
SW95-01	NBD-866,NBF-157	02/16/1996	-41.3	<12.0	387	<29.08[d]	-1.2	-1.2	<24.63	112000
Slade Spring	NBC-629,NBC-754	10/22/1996	-23.4	<6.0	263	22.04	<1.1	<1.0	<23.14	401000
Sorenson	NBF-167,NBF-168	04/09/1996	418	<9.0	2182	-94.39	<0.44	<0.44	52.94	311000
	NBF-169,NBF-170	04/09/1996	497	<9.0	No Data	-72.83	<0.44	<0.44	<50.06	312000
	NBD-104	06/26/1996	-105	No Data	No Data	174.93	-4.6	No Data	36.45	307000
	NBC-634,NBC-759	10/23/1996	-28.4	<6.0	291	89.28	<1.1	<1.0	51.19	319000
W-4	NBC-632,NBC-757	10/22/1996	725	<6.0	247	29.54	1.2	1.0	<19.39	323000

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "-" indicates an estimated value. An "R" indicates that the result was determined unusable through data validation.
[b] Sample was filtered in the field.
[c] The values listed multiplied by 10^{-9} will result in microcuries per milliliter.
[d] Estimated.

Table A-15 (continued). Surface-Water Chemistry Data Collected At and Near the MMTS During 1996[a]

Sample Location	Ticket Numbers	Sample Date	Ca[b] (µg/L)	CDT[c] (µmhos/cm)	Cl (µg/L)	Co (µg/L)	Co[b] (µg/L)	Cu (µg/L)	Cu[b] (µg/L)	F (µg/L)
14SW96-01	NBF-435,NBF-436	06/10/1996	131000	971	33000	<6.6	<6.6	<3.7	<3.7	170
15SW96-01	NBF-437,NBF-438	06/10/1996	111000	866	31400	<6.6	<6.6	<3.7	<3.7	198
16SW96-01	NBF-439,NBF-440	06/10/1996	105000	883	31700	<6.6	<6.6	<3.7	<3.7	178
17SW96-01	NBF-441,NBF-442	06/11/1996	81000	819	19000	<6.6	<6.6	<3.7	<3.7	279
18SW96-01	NBD-490,NBD-491	06/11/1996	209000	1821	72900	<6.6	<6.6	<3.7	<3.7	225
19SW96-01	NBF-443,NBF-444	06/11/1996	189000	1667	62800	<6.6	<6.6	<3.7	<3.7	201
20SW96-01	NBD-492,NBD-493	06/11/1996	214000	1684	41300	<6.6	<6.6	<3.7	<3.7	183
21SW96-01	NBF-421,NBF-422	06/11/1996	272000	1701	31800	<6.6	<6.6	<3.7	<3.7	165
	NBF-423,NBF-424	06/11/1996	267000	No Data	31700	<6.6	<6.6	<3.7	<3.7	171
22SW96-01	NBF-419,NBF-420	06/11/1996	260000	1624	33200	<6.6	<6.6	<3.7	<3.7	163
23SW96-01	NBF-449,NBF-450	06/11/1996	262000	1656	32600	<6.6	<6.6	<3.7	4.7	170
24SW96-01	NBF-447,NBF-448	06/11/1996	258000	1636	30600	<6.6	<6.6	<3.7	<3.7	172
25SW96-01	NBF-445,NBF-446	06/11/1996	257000	1652	29900	<6.6	<6.6	<3.7	<3.7	169
Montezuma Canyon	NBC-640,NBC-764	10/23/1996	197000	1982	126000	<6.7	<6.0	-3.2	-2.5	283
	NBC-641,NBC-765	10/23/1996	195000	No Data	126000	<6.7	<6.0	4.5	-2.2	260
SW92-01	NBD-108	06/26/1996	No Data	No Data	4610	<6.6	No Data	<3.7	No Data	231
	NBD-109	06/26/1996	No Data	No Data	4600	<6.6	No Data	<3.7	No Data	231
	NBC-626,NBC-751	10/21/1996	268000	1492	4480	<6.7	<6.0	-1.8	<1.0	-187
SW92-02	NBC-627,NBC-752	10/21/1996	84500	605	5510	<6.7	<6.0	-2.7	<1.0	-171
SW92-03	NBC-628,NBC-753	10/21/1996	159000	990	5360	<6.7	<6.0	5.0	<1.0	-178
SW92-04	NBC-630,NBC-755	10/22/1996	341000	1768	8980	<6.7	<6.0	-2.4	<1.0	-186
SW92-05	NBF-171,NBF-172	04/10/1996	326000	1807	8200	<7.8	<7.0	<3.3	<3.0	-162
	NBC-631,NBC-756	10/22/1996	352000	1791	7990	<6.7	<6.0	-1.8	<1.0	-153
SW92-06	NBC-633,NBC-758	10/22/1996	324000	1872	18300	<6.7	<6.0	-2.0	<1.0	-187
SW92-07	NBF-164,NBF-165	04/09/1996	308000	1844	27900	<7.8	<7.0	<3.3	<3.0	-164
	NBD-103	06/26/1996	No Data	No Data	41500	<6.6	No Data	<3.7	No Data	-180
	NBC-636,NBC-760	10/23/1996	319000	2050	45000	<6.7	<6.0	-2.3	-1.3	214
SW92-08	NBC-637,NBC-761	10/23/1996	282000	1940	44100	<6.7	<6.0	-2.3	-1.4	-197

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "-" indicates an estimated value. An "R" indicates that the result was determined unusable through data validation.
[b] Sample was filtered in the field.
[c] Conductivity in micromhos per centimeter.

Table A-15 (continued). Surface-Water Chemistry Data Collected At and Near the MMTS During 1996[a]

Sample Location	Ticket Numbers	Sample Date	Ca[b] (µg/L)	CDT[c] (µmhos/cm)	Cl (µg/L)	Co (µg/L)	Co[b] (µg/L)	Cu (µg/L)	Cu[b] (µg/L)	F (µg/L)
SW92-09	NBC-638,NBC-762	10/23/1996	267000	1928	45500	<6.7	<6.0	5.3	-1.5	-179
SW94-01	NBD-867,NBF-160	02/16/1996	293000	1995	39600	<5.6	<5.0	<4.4	<4.0	-186
	NBD-868,NBF-161	02/16/1996	295000	No Data	65900	<5.6	<5.0	<4.4	<4.0	334
	NBF-162,NBF-163	04/09/1996	274000	1784	32200	<7.8	<7.0	<3.3	<3.0	222
	NBD-102	06/26/1996	No Data	No Data	43200	<6.6	No Data	<3.7	No Data	-196
	NBC-639,NBC-763	10/23/1996	262000	No Data	45700	<6.7	<6.0	-2.1	-1.4	214
SW95-01	NBD-866,NBF-157	02/16/1996	115000	1395	39700	<5.6	<5.0	<4.4	<4.0	253
Slade Spring	NBC-629,NBC-754	10/22/1996	410000	2060	8120	<6.7	<6.0	-1.8	<1.0	-123
Sorenson	NBF-167,NBF-168	04/09/1996	324000	1865	26800	<7.8	<7.0	<3.3	<3.0	-174
	NBF-169,NBF-170	04/09/1996	314000	No Data	26900	<7.8	<7.0	<3.3	<3.0	-178
	NBD-104	06/26/1996	No Data	No Data	41400	<6.6	No Data	<3.7	No Data	-185
	NBC-634,NBC-759	10/23/1996	329000	2170	45900	<6.7	<6.0	-2.2	-1.4	202
W-4	NBC-632,NBC-757	10/22/1996	336000	1792	10200	<6.7	<6.0	-2.7	<1.0	-189

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "~" indicates an estimated value. An "R" indicates that the result was determined unusable through data validation.
[b] Sample was filtered in the field.
[c] Conductivity in micromhos per centimeter.

Table A-15 (continued). Surface-Water Chemistry Data Collected At and Near the MMTS During 1996[a]

Sample Location	Ticket Numbers	Sample Date	K (µg/L)	K[b] (µg/L)	Mg (µg/L)	Mg[b] (µg/L)	Mn (µg/L)	Mn[b] (µg/L)	Mo (µg/L)	Mo[b] (µg/L)
14SW96-01	NBF-435,NBF-436	06/10/1996	2130	2200	29400	29400	182	499	~4.4	~4.0
15SW96-01	NBF-437,NBF-438	06/10/1996	2740	1800	27600	27500	117	317	~4.4	~4.2
16SW96-01	NBF-439,NBF-440	06/10/1996	2940	2290	27400	27500	102	109	~4.3	~4.3
17SW96-01	NBF-441,NBF-442	06/11/1996	5410	5590	30100	29800	406	394	~4.9	~5.0
18SW96-01	NBD-490,NBD-491	06/11/1996	4770	5120	62000	62100	99.0	119	~12.2	~12.1
19SW96-01	NBF-443,NBF-444	06/11/1996	5690	5510	58800	58600	328	355	~9.6	~9.3
20SW96-01	NBD-492,NBD-493	06/11/1996	4940	5850	56100	56100	85.4	90.6	15.1	15.3
21SW96-01	NBF-421,NBF-422	06/11/1996	4790	3740	57000	57000	69.4	78.3	18.1	18.0
	NBF-423,NBF-424	06/11/1996	4540	4170	56100	55600	68.6	76.5	17.8	17.9
22SW96-01	NBF-419,NBF-420	06/11/1996	4680	4860	56100	56200	147	139	19.2	18.6
23SW96-01	NBF-449,NBF-450	06/11/1996	4860	4440	52700	54800	104	172	17.7	18.2
24SW96-01	NBF-447,NBF-448	06/11/1996	3810	3620	53600	54200	192	208	16.3	16.0
25SW96-01	NBF-445,NBF-446	06/11/1996	3720	3690	53900	53600	178	197	15.8	15.6
Montezuma Canyon	NBC-640,NBC-764	10/23/1996	7040	6160	61500	61100	492	392	6.8	6.1
	NBC-641,NBC-765	10/23/1996	7100	6240	62000	61600	491	388	6.8	6.2
SW92-01	NBD-108	06/26/1996	~3310	No Data	42500	No Data	95.3	No Data	~3.0	No Data
	NBD-109	06/26/1996	~3520	No Data	42500	No Data	95.7	No Data	~3.3	No Data
	NBC-626,NBC-751	10/21/1996	2820	3100	34800	39500	46.2	49.7	2.6	2.5
SW92-02	NBC-627,NBC-752	10/21/1996	1400	1400	12800	13500	8.4	5.2	1.4	1.3
SW92-03	NBC-628,NBC-753	10/21/1996	2520	2270	21300	23800	21.9	5.7	2.2	2.2
SW92-04	NBC-630,NBC-755	10/22/1996	3260	3290	47200	50400	261	229	2.4	2.3
SW92-05	NBF-171,NBF-172	04/10/1996	~2150	~3300	51400	50200	154	144	<0.56	~2.3
	NBC-631,NBC-756	10/22/1996	3320	2940	48300	46800	211	181	2.5	2.5
SW92-06	NBC-633,NBC-758	10/22/1996	4560	4200	50000	50000	126	97.7	12.4	12.1
SW92-07	NBF-164,NBF-165	04/09/1996	~2840	~3940	56200	55800	215	206	~13.0	~12.7
	NBD-103	06/26/1996	~5330	No Data	55900	No Data	88.1	No Data	~19.4	No Data
	NBC-636,NBC-760	10/23/1996	5460	4470	54400	48700	99.8	75.7	22.1	22.3
SW92-08	NBC-637,NBC-761	10/23/1996	5510	4870	52400	51200	118	116	21.7	21.0

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "~" indicates an estimated value. An "R" indicates that the result was determined unusable through data validation.
[b] Sample was filtered in the field.

Table A-15 (continued). Surface-Water Chemistry Data Collected At and Near the MMTS During 1996[a]

Sample Location	Ticket Numbers	Sample Date	K (µg/L)	K[b] (µg/L)	Mg (µg/L)	Mg[b] (µg/L)	Mn (µg/L)	Mn[b] (µg/L)	Mo (µg/L)	Mo[b] (µg/L)
SW92-09	NBC-638,NBC-762	10/23/1996	5650	6200	53100	59700	45.2	49.5	23.3	20.7
SW94-01	NBD-867,NBF-160	02/16/1996	~4560	~3460	58600	57300	398	368	~14.2	~14.9
	NBD-868,NBF-161	02/16/1996	~4460	~4060	58800	57300	398	396	~15.2	~14.3
	NBF-162,NBF-163	04/09/1996	~4170	~3490	54000	53800	315	306	~13.5	~13.0
	NBD-102	06/26/1996	~4180	No Data	56300	No Data	42.1	No Data	~19.5	No Data
	NBC-639,NBC-763	10/23/1996	5540	5080	52100	51900	45.7	42.2	21.6	20.2
SW95-01	NBD-866,NBF-157	02/16/1996	~3980	~4110	34400	34500	221	221	<1.1	<1.1
Slade Spring	NBC-629,NBC-754	10/22/1996	3420	3170	56500	56200	19.4	25.0	2.6	2.5
Sorenson	NBF-167,NBF-168	04/09/1996	~2970	~4450	56900	58500	194	181	~13.8	~13.5
	NBF-169,NBF-170	04/09/1996	~3190	~3990	57000	56300	194	175	~14.0	~14.5
	NBD-104	06/26/1996	~4870	No Data	59900	No Data	81.6	No Data	~24.4	No Data
	NBC-634,NBC-759	10/23/1996	5550	5340	57600	57800	104	99.5	25.9	24.7
W-4	NBC-632,NBC-757	10/22/1996	4040	3460	48900	48300	151	115	5.9	5.8

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "~" indicates an estimated value. An "R" indicates that the result was determined unusable through data validation.
[b] Sample was filtered in the field.

Table A-15 (continued). Surface-Water Chemistry Data Collected At and Near the MMTS During 1996[a]

Sample Location	Ticket Numbers	Sample Date	Na (µg/L)	Na[b] (µg/L)	NH_4 (µg/L)	Ni (µg/L)	Ni[b] (µg/L)	NO_3+NO_2-N[c] (µg/L)	Pb (µg/L)	Pb[b] (µg/L)
14SW96-01	NBF-435,NBF-436	06/10/1996	51200	52300	20.0	No Data	No Data	<7.0	1.3	1.1
15SW96-01	NBF-437,NBF-438	06/10/1996	51900	52000	20.0	No Data	No Data	<7.0	-0.66	0.91
16SW96-01	NBF-439,NBF-440	06/10/1996	51500	52200	-15.2	No Data	No Data	<7.0	-0.69	-0.61
17SW96-01	NBF-441,NBF-442	06/11/1996	65100	64900	20.0	No Data	No Data	-10.4	-0.55	-0.48
18SW96-01	NBD-490,NBD-491	06/11/1996	147000	147000	-17.6	No Data	No Data	<7.0	-0.79	-0.74
19SW96-01	NBF-443,NBF-444	06/11/1996	132000	131000	24.7	No Data	No Data	<7.0	-0.41	-0.82
20SW96-01	NBD-492,NBD-493	06/11/1996	117000	117000	34.1	No Data	No Data	<7.0	-0.80	-0.82
21SW96-01	NBF-421,NBF-422	06/11/1996	82500	82800	53.0	No Data	No Data	141	1.7	1.2
	NBF-423,NBF-424	06/11/1996	82100	81300	60.0	No Data	No Data	150	1.2	-0.87
22SW96-01	NBF-419,NBF-420	06/11/1996	83800	83800	24.7	No Data	No Data	588	-0.67	1.1
23SW96-01	NBF-449,NBF-450	06/11/1996	80000	82700	41.2	No Data	No Data	59.8	-0.76	-0.72
24SW96-01	NBF-447,NBF-448	06/11/1996	78300	78900	41.2	No Data	No Data	-28.4	-0.75	-0.77
25SW96-01	NBF-445,NBF-446	06/11/1996	78600	78500	34.1	No Data	No Data	-19.1	-0.82	-0.79
Montezuma Canyon	NBC-640,NBC-764	10/23/1996	167000	165000	24.1	No Data	No Data	-42.3	<1.1	<1.0
	NBC-641,NBC-765	10/23/1996	169000	167000	-11.1	No Data	No Data	-19.5	<1.1	<1.0
SW92-01	NBD-108	06/26/1996	23600	No Data	No Data	No Data	No Data	-11.3	-1.4	No Data
	NBD-109	06/26/1996	23800	No Data	No Data	No Data	No Data	-15.1	-1.8	No Data
	NBC-626,NBC-751	10/21/1996	23100	24100	-19.8	No Data	No Data	-82.4	19.9	<1.0
SW92-02	NBC-627,NBC-752	10/21/1996	20600	20500	-17.6	No Data	No Data	-57.7	<1.1	<1.0
SW92-03	NBC-628,NBC-753	10/21/1996	20000	21100	-15.4	No Data	No Data	-18.2	<1.1	<1.0
SW92-04	NBC-630,NBC-755	10/22/1996	41900	42400	-19.8	No Data	No Data	-122	<1.1	<1.0
SW92-05	NBF-171,NBF-172	04/10/1996	38200	37900	192	No Data	No Data	-236	<0.44	<0.40
	NBC-631,NBC-756	10/22/1996	42900	40100	-17.6	No Data	No Data	-114	<1.1	<1.0
SW92-06	NBC-633,NBC-758	10/22/1996	60700	58000	32.8	No Data	No Data	-79.0	150	<1.0
SW92-07	NBF-164,NBF-165	04/09/1996	70600	70700	37.6	No Data	No Data	-353	<0.44	<0.40
	NBD-103	06/26/1996	92500	No Data	No Data	No Data	No Data	-76.0	-2.1	No Data
	NBC-636,NBC-760	10/23/1996	101000	88500	21.9	No Data	No Data	-173	<1.1	<1.0
SW92-08	NBC-637,NBC-761	10/23/1996	101000	96000	-17.6	No Data	No Data	-19.6	<1.1	<1.0

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "~" indicates an estimated value. An "R" indicates that the result was determined unusable through data validation.
[b] Sample was filtered in the field.
[c] (Nitrate + nitrite) as nitrogen.

Table A-15 (continued). Surface-Water Chemistry Data Collected At and Near the MMTS During 1996[a]

Sample Location	Ticket Numbers	Sample Date	Na (µg/L)	Na[b] (µg/L)	NH_4 (µg/L)	Ni (µg/L)	Ni[b] (µg/L)	NO_3+NO_2-N[c] (µg/L)	Pb (µg/L)	Pb[b] (µg/L)
SW92-09	NBC-638,NBC-762	10/23/1996	102000	115000	-13.3	No Data	No Data	-42.0	<1.1	<1.0
SW94-01	NBD-867,NBF-160	02/16/1996	94600	91300	82.5	<10.0	<9.0	457	<1.1	<1.0
	NBD-868,NBF-161	02/16/1996	94300	91800	87.5	<10.0	<9.0	457	<1.1	<1.0
	NBF-162,NBF-163	04/09/1996	78000	78600	29.9	No Data	No Data	-56.5	<0.44	<0.40
	NBD-102	06/26/1996	95500	No Data	No Data	No Data	No Data	-7.0	-2.4	No Data
	NBC-639,NBC-763	10/23/1996	102000	99000	-8.9	No Data	No Data	-25.6	<1.1	<1.0
SW95-01	NBD-866,NBF-157	02/16/1996	148000	148000	37.5	<10.0	<9.0	-15.5	<1.1	<1.0
Slade Spring	NBC-629,NBC-754	10/22/1996	44600	43200	-15.4	No Data	No Data	-418	<1.1	<1.0
Sorenson	NBF-167,NBF-168	04/09/1996	67400	70700	27.3	No Data	No Data	-395	<0.44	<0.40
	NBF-169,NBF-170	04/09/1996	67700	68400	32.4	No Data	No Data	-395	<0.44	<0.40
	NBD-104	06/26/1996	91200	No Data	No Data	No Data	No Data	275	-2.3	No Data
	NBC-634,NBC-759	10/23/1996	101000	101000	-13.3	No Data	No Data	-309	<1.1	<1.0
W-4	NBC-632,NBC-757	10/22/1996	47800	45900	28.5	No Data	No Data	-97.6	<1.1	<1.0

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "-" indicates an estimated value. An "R" indicates that the result was determined unusable through data validation.
[b] Sample was filtered in the field.
[c] (Nitrate + nitrite) as nitrogen.

Table A-15 (continued). Surface-Water Chemistry Data Collected At and Near the MMTS During 1996[a]

Sample Location	Ticket Numbers	Sample Date	Pb-210 (pCi/L)[b]	pH	Ra-226 (pCi/L)[b]	Rn-222 (pCi/L)[b]	Sb (μg/L)	Sb[c] (μg/L)	Se (μg/L)	Se[c] (μg/L)
14SW96-01	NBF-435,NBF-436	06/10/1996	<1.3	8.17	<0.05	44	No Data	No Data	<1.7	2.6
15SW96-01	NBF-437,NBF-438	06/10/1996	<1.10	8.16	<0.06	<40	No Data	No Data	<1.7	<1.7
16SW96-01	NBF-439,NBF-440	06/10/1996	<1.4	8.14	<0.06	<40	No Data	No Data	<1.7	<1.7
17SW96-01	NBF-441,NBF-442	06/11/1996	<1.2	7.78	<0.11	545	No Data	No Data	<1.7	<1.7
18SW96-01	NBD-490,NBD-491	06/11/1996	<1.2	8.17	<0.09	41	No Data	No Data	<1.7	<1.7
19SW96-01	NBF-443,NBF-444	06/11/1996	<1.3	7.9	0.58	103	No Data	No Data	<1.7	<1.7
20SW96-01	NBD-492,NBD-493	06/11/1996	<1.2	7.72	0.34	100	No Data	No Data	-1.7	<1.7
21SW96-01	NBF-421,NBF-422	06/11/1996	<1.2	8.16	0.83	93	No Data	No Data	<1.7	-2.1
	NBF-423,NBF-424	06/11/1996	<1.2	No Data	1.02	96	No Data	No Data	2.4	-2.1
22SW96-01	NBF-419,NBF-420	06/11/1996	<1.4	8.94	1.10	113	No Data	No Data	-1.8	2.6
23SW96-01	NBF-449,NBF-450	06/11/1996	<1.3	7.99	0.82	186	No Data	No Data	-2.1	3.1
24SW96-01	NBF-447,NBF-448	06/11/1996	<1.2	8.1	1.09	57	No Data	No Data	-2.0	2.3
25SW96-01	NBF-445,NBF-446	06/11/1996	<1.2	7.72	0.69	63	No Data	No Data	<1.7	<1.7
Montezuma Canyon	NBC-640,NBC-764	10/23/1996	<1.05	7.80	0.26	No Data	No Data	No Data	<2.2	<2.0
	NBC-641,NBC-765	10/23/1996	1.08	No Data	0.23	No Data	No Data	No Data	<2.2	<2.0
SW92-01	NBD-108	06/26/1996	<1.19	No Data	0.41	<29	No Data	No Data	<1.7[d]	No Data
	NBD-109	06/26/1996	<1.14	No Data	0.29	<30	No Data	No Data	<1.7[d]	No Data
	NBC-626,NBC-751	10/21/1996	<1.25	No Data	<0.08	<34	No Data	No Data	<2.2	<2.0
SW92-02	NBC-627,NBC-752	10/21/1996	<1.24	No Data	0.09	58	No Data	No Data	<2.2	<2.0
SW92-03	NBC-628,NBC-753	10/21/1996	<1.22	No Data	0.10	<34	No Data	No Data	<2.2	<2.0
SW92-04	NBC-630,NBC-755	10/22/1996	<1.01	7.51	0.25	405	No Data	No Data	<2.2	<2.0
SW92-05	NBF-171,NBF-172	04/10/1996	<1.26	7.88	0.26	137	No Data	No Data	-2.0	-2.4
	NBC-631,NBC-756	10/22/1996	<1.00	7.20	0.28	160	No Data	No Data	<2.2	<2.0
SW92-06	NBC-633,NBC-758	10/22/1996	<1.27	7.35	0.31	296	No Data	No Data	<2.2	3.7
SW92-07	NBF-164,NBF-165	04/09/1996	<1.32	8.11	0.77	103	No Data	No Data	-2.1	-3.2
	NBD-103	06/26/1996	<1.13	No Data	1.00	<30	No Data	No Data	<1.7[d]	No Data
	NBC-636,NBC-760	10/23/1996	1.69	7.52	0.53	226	No Data	No Data	3.5	4.0
SW92-08	NBC-637,NBC-761	10/23/1996	1.55	7.82	0.51	72	No Data	No Data	2.9	3.2

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "-" indicates an estimated value. An "R" indicates that the result was determined unusable through data validation.
[b] The values listed multiplied by 10^{-9} will result in microcuries per milliliter.
[c] Sample was filtered in the field.
[d] Estimated.

Table A-15 (continued). Surface-Water Chemistry Data Collected At and Near the MMTS During 1996[a]

Sample Location	Ticket Numbers	Sample Date	Pb-210 (pCi/L)[b]	pH	Ra-226 (pCi/L)[b]	Rn-222 (pCi/L)[b]	Sb (µg/L)	Sb[c] (µg/L)	Se (µg/L)	Se[c] (µg/L)
SW92-09	NBC-638,NBC-762	10/23/1996	1.39	7.95	0.62	41	No Data	No Data	~2.5	2.7
SW94-01	NBD-867,NBF-160	02/16/1996	0.48	8.10	0.71	128	<1.1	<1.0	<2.2[d]	<2.0
	NBD-868,NBF-161	02/16/1996	1.40	No Data	0.63	147	<1.1	<1.0	<2.2[d]	~2.0
	NBF-162,NBF-163	04/09/1996	<1.41	8.33	0.77	126	No Data	No Data	~1.6	~2.0
	NBD-102	06/26/1996	<1.21	No Data	0.90	<30	No Data	No Data	<1.7[d]	No Data
	NBC-639,NBC-763	10/23/1996	1.62	No Data	0.60	46	No Data	No Data	3.2	2.4
SW95-01	NBD-866,NBF-157	02/16/1996	1.34	7.93	<0.09	73	<1.1	<1.0	<2.2[d]	<2.0
Slade Spring	NBC-629,NBC-754	10/22/1996	<1.45	6.76	0.17	1211	No Data	No Data	<2.2	2.4
Sorenson	NBF-167,NBF-168	04/09/1996	<1.35	7.92	0.50	115	No Data	No Data	~2.6	~3.4
	NBF-169,NBF-170	04/09/1996	<1.40	No Data	0.70	126	No Data	No Data	~2.9	~2.8
	NBD-104	06/26/1996	<1.23	No Data	0.71	70	No Data	No Data	~1.8	No Data
	NBC-634,NBC-759	10/23/1996	1.78	7.46	0.39	191	No Data	No Data	3.3	4.0
W-4	NBC-632,NBC-757	10/22/1996	<1.30	7.78	0.21	48	No Data	No Data	<2.2	<2.0

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "~" indicates an estimated value. An "R" indicates that the result was determined unusable through data validation.
[b] The values listed multiplied by 10^{-9} will result in microcuries per milliliter.
[c] Sample was filtered in the field.
[d] Estimated.

Table A-15 (continued). Surface-Water Chemistry Data Collected At and Near the MMTS During 1996[a]

Sample Location	Ticket Numbers	Sample Date	Sn (μg/L)	Sn[b] (μg/L)	SO_4 (μg/L)	TDS[c] (mg/L)	Temperature (degrees C)	Th230 (pCi/L)[d]	U (μg/L)	U[b] (μg/L)
14SW96-01	NBF-435,NBF-436	06/10/1996	No Data	No Data	230000	603	19.6	<0.04	<2.2	<2.3
15SW96-01	NBF-437,NBF-438	06/10/1996	No Data	No Data	222000	565	24.5	0.18	<2.1	<2.2
16SW96-01	NBF-439,NBF-440	06/10/1996	No Data	No Data	222000	562	23.4	<0.04	<2.1	<2.1
17SW96-01	NBF-441,NBF-442	06/11/1996	No Data	No Data	127000	500	15.6	<0.06	<2.1	<2.1
18SW96-01	NBD-490,NBD-491	06/11/1996	No Data	No Data	724000	1380	23.4	<0.05	62.2	63.2
19SW96-01	NBF-443,NBF-444	06/11/1996	No Data	No Data	638000	1250	18.6	<0.05	49.8	49.0
20SW96-01	NBD-492,NBD-493	06/11/1996	No Data	No Data	749000	1340	22.3	<0.04	101	104
21SW96-01	NBF-421,NBF-422	06/11/1996	No Data	No Data	782000	1440	22.4	<0.04	158	160
	NBF-423,NBF-424	06/11/1996	No Data	No Data	782000	1420	No Data	<0.02	156	155
22SW96-01	NBF-419,NBF-420	06/11/1996	No Data	No Data	758000	1370	21.4	0.11	159	164
23SW96-01	NBF-449,NBF-450	06/11/1996	No Data	No Data	717000	1020	17.7	<0.04	158	159
24SW96-01	NBF-447,NBF-448	06/11/1996	No Data	No Data	728000	1350	20.1	<0.04	140	136
25SW96-01	NBF-445,NBF-446	06/11/1996	No Data	No Data	726000	1340	19.6	<0.06	135	133
Montezuma Canyon	NBC-640,NBC-764	10/23/1996	No Data	No Data	607000	1440	9.2	<0.07	No Data	No Data
	NBC-641,NBC-765	10/23/1996	No Data	No Data	608000	1450	No Data	<0.08	No Data	No Data
SW92-01	NBD-108	06/26/1996	No Data	No Data	782000	No Data	No Data	<0.06	~3.8	No Data
	NBD-109	06/26/1996	No Data	No Data	788000	No Data	No Data	0.15	~3.7	No Data
	NBC-626,NBC-751	10/21/1996	No Data	No Data	614000	1190	5.0	<0.09	No Data	No Data
SW92-02	NBC-627,NBC-752	10/21/1996	No Data	No Data	99600	380	2.3	<0.06	No Data	No Data
SW92-03	NBC-628,NBC-753	10/21/1996	No Data	No Data	313000	708	3.4	<0.07	No Data	No Data
SW92-04	NBC-630,NBC-755	10/22/1996	No Data	No Data	784000	1480	8.3	<0.09	No Data	No Data
SW92-05	NBF-171,NBF-172	04/10/1996	No Data	No Data	825000	1500	5.5	<0.12	30.7	29.7
	NBC-631,NBC-756	10/22/1996	No Data	No Data	791000	1490	8.1	<0.08	No Data	No Data
SW92-06	NBC-633,NBC-758	10/22/1996	No Data	No Data	802000	1530	5.8	<0.11	No Data	No Data
SW92-07	NBF-164,NBF-165	04/09/1996	No Data	No Data	828000	1550	12.3	<0.15	136	136
	NBD-103	06/26/1996	No Data	No Data	800000	No Data	No Data	<0.05	158	No Data
	NBC-636,NBC-760	10/23/1996	No Data	No Data	789000	1560	1.3	<0.10	No Data	No Data
SW92-08	NBC-637,NBC-761	10/23/1996	No Data	No Data	750000	1460	1.3	<0.12	No Data	No Data

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "~" indicates an estimated value. An "R" indicates that the result was determined unusable through data validation.
[b] Sample was filtered in the field.
[c] Total dissolved solids.
[d] The values listed multiplied by 10^{-9} will result in microcuries per milliliter.

Table A-15 (continued). Surface-Water Chemistry Data Collected At and Near the MMTS During 1996[a]

Sample Location	Ticket Numbers	Sample Date	Sn (μg/L)	Sn[b] (μg/L)	SO_4 (μg/L)	TDS[c] (mg/L)	Temperature (degrees C)	Th230 (pCi/L)[d]	U (μg/L)	U[b] (μg/L)
SW92-09	NBC-638,NBC-762	10/23/1996	No Data	No Data	748000	1460	6.5	<0.08	No Data	No Data
SW94-01	NBD-867,NBF-160	02/16/1996	<1.1	<1.0	809000	1590	1.6	<0.80	No Data	No Data
	NBD-868,NBF-161	02/16/1996	<1.1	<1.0	275000	1590	No Data	<0.80	No Data	No Data
	NBF-162,NBF-163	04/09/1996	No Data	No Data	772000	1450	7.5	<0.15	128	129
	NBD-102	06/26/1996	No Data	No Data	782000	No Data	No Data	0.05	160	No Data
	NBC-639,NBC-763	10/23/1996	No Data	No Data	738000	1430	No Data	<0.09	No Data	No Data
SW95-01	NBD-866,NBF-157	02/16/1996	<1.1	<1.0	810000	870	0.1	<0.80	No Data	No Data
Slade Spring	NBC-629,NBC-754	10/22/1996	No Data	No Data	979000	1790	11.0	<0.07	No Data	No Data
Sorenson	NBF-167,NBF-168	04/09/1996	No Data	No Data	858000	1580	14.5	<0.11	141	143
	NBF-169,NBF-170	04/09/1996	No Data	No Data	862000	1590	No Data	<0.15	141	138
	NBD-104	06/26/1996	No Data	No Data	881000	No Data	No Data	<0.05	218	No Data
	NBC-634,NBC-759	10/23/1996	No Data	No Data	858000	1690	1.6	<0.07	No Data	No Data
W-4	NBC-632,NBC-757	10/22/1996	No Data	No Data	797000	1500	5.5	<0.11	No Data	No Data

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "~" indicates an estimated value. An "R" indicates that the result was determined unusable through data validation.
[b] Sample was filtered in the field.
[c] Total dissolved solids.
[d] The values listed multiplied by 10^{-9} will result in microcuries per milliliter.

Table A-15 (continued). Surface-Water Chemistry Data Collected At and Near the MMTS During 1996[a]

Sample Location	Ticket Numbers	Sample Date	U-234 (pCi/L)[b]	U-235 (pCi/L)[b]	U-238 (pCi/L)[b]	V (μg/L)	V[c] (μg/L)	Zn (μg/L)	Zn[c] (μg/L)
14SW96-01	NBF-435,NBF-436	06/10/1996	1.33	<0.07	0.60	<7.7	<7.7	~7.1	32.1
15SW96-01	NBF-437,NBF-438	06/10/1996	1.37	<0.07	0.82	<7.7	<7.7	~2.0	11.2
16SW96-01	NBF-439,NBF-440	06/10/1996	1.28	<0.04	0.49	<7.7	<7.7	~2.4	~10.1
17SW96-01	NBF-441,NBF-442	06/11/1996	1.50	<0.06	0.64	<7.7	<7.7	~2.8	~6.2
18SW96-01	NBD-490,NBD-491	06/11/1996	21.70	0.91	20.55	<7.7	<7.7	<1.9	19.8
19SW96-01	NBF-443,NBF-444	06/11/1996	16.23	0.71	15.22	<7.7	<7.7	<1.9	<1.9
20SW96-01	NBD-492,NBD-493	06/11/1996	32.03	1.60	31.13	<7.7	<7.7	<1.9	16.2
21SW96-01	NBF-421,NBF-422	06/11/1996	49.50	2.10	48.26	<7.7	13.0	16.0	~10.3
	NBF-423,NBF-424	06/11/1996	51.09	2.34	50.80	<7.7	9.9	~3.3	~3.3
22SW96-01	NBF-419,NBF-420	06/11/1996	~54.38	~2.48	~52.65	8.9	11.4	~2.9	~5.8
23SW96-01	NBF-449,NBF-450	06/11/1996	52.11	2.19	51.87	<7.7	<7.7	<1.9	~10.2
24SW96-01	NBF-447,NBF-448	06/11/1996	46.41	2.23	44.88	<7.7	<7.7	~4.6	~3.3
25SW96-01	NBF-445,NBF-446	06/11/1996	43.46	2.01	43.55	<7.7	<7.7	~4.7	~5.5
Montezuma Canyon	NBC-640,NBC-764	10/23/1996	15.26	0.61	14.21	~4.1	~1.1	~11.4	<6.0
	NBC-641,NBC-765	10/23/1996	15.40	0.58	14.36	~3.6	~1.3	~11.7	<6.0
SW92-01	NBD-108	06/26/1996	2.88	0.07	1.39	<7.7	No Data	~6.2	No Data
	NBD-109	06/26/1996	3.12	0.06	1.21	<7.7	No Data	92.3	No Data
	NBC-626,NBC-751	10/21/1996	2.27	0.08	1.11	<1.1	<1.0	~10.2	<6.0
SW92-02	NBC-627,NBC-752	10/21/1996	1.28	<0.10	0.60	<1.1	<1.0	~10.2	<6.0
SW92-03	NBC-628,NBC-753	10/21/1996	1.60	0.11	0.85	~4.2	<1.0	16.8	<6.0
SW92-04	NBC-630,NBC-755	10/22/1996	14.94	0.53	14.09	~2.3	~1.7	13.5	<6.0
SW92-05	NBF-171,NBF-172	04/10/1996	11.86	0.69	9.91	<6.7	<6.0	~3.0	~2.1
	NBC-631,NBC-756	10/22/1996	15.38	0.54	13.85	~3.2	~2.3	~8.3	<6.0
SW92-06	NBC-633,NBC-758	10/22/1996	42.44	1.72	43.39	16.9	12.5	~8.8	<6.0
SW92-07	NBF-164,NBF-165	04/09/1996	43.72	1.82	44.64	<6.7	<6.0	<2.2	<2.0
	NBD-103	06/26/1996	52.19	2.56	51.40	<7.7	No Data	~9.9	No Data
	NBC-636,NBC-760	10/23/1996	78.87	3.32	77.03	~4.0	~2.3	~9.9	<6.0
SW92-08	NBC-637,NBC-761	10/23/1996	72.87	3.25	73.90	~2.4	~2.1	<6.7	<6.0

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "~" indicates an estimated value. An "R" indicates that the result was determined unusable through data validation.
[b] The values listed multiplied by 10^{-9} will result in microcuries per milliliter.
[c] Sample was filtered in the field.

Table A-15 (continued). Surface-Water Chemistry Data Collected At and Near the MMTS During 1996[a]

Sample Location	Ticket Numbers	Sample Date	U-234 (pCi/L)[b]	U-235 (pCi/L)[b]	U-238 (pCi/L)[b]	V (µg/L)	V[c] (µg/L)	Zn (µg/L)	Zn[c] (µg/L)
SW92-09	NBC-638,NBC-762	10/23/1996	69.54	4.01	71.13	~2.1	~2.6	12.3	<6.0
SW94-01	NBD-867,NBF-160	02/16/1996	~50.9	2.2	51.9	~7.1	<5.0	~9.3	<2.0
	NBD-868,NBF-161	02/16/1996	~49.1	2.1	51.8	<5.6	<5.0	~5.0	<2.0
	NBF-162,NBF-163	04/09/1996	42.67	2.46	41.88	<6.7	<6.0	<2.2	<2.0
	NBD-102	06/26/1996	53.41	2.25	54.06	~8.4	No Data	~12.3	No Data
	NBC-639,NBC-763	10/23/1996	69.27	2.70	69.25	~1.7	~1.9	<6.7	<6.0
SW95-01	NBD-866,NBF-157	02/16/1996	~2.9	<1.1	1.5	<5.6	<5.0	~16.0	<2.0
Slade Spring	NBC-629,NBC-754	10/22/1996	13.84	0.45	11.48	~3.3	~3.4	~7.0	<6.0
Sorenson	NBF-167,NBF-168	04/09/1996	45.95	2.02	46.59	~12.3	<6.0	~2.9	<2.0
	NBF-169,NBF-170	04/09/1996	46.19	1.89	45.81	<6.7	<6.0	~3.8	<2.0
	NBD-104	06/26/1996	75.04	3.11	72.92	<7.7	No Data	~8.1	No Data
	NBC-634,NBC-759	10/23/1996	82.92	3.37	82.02	~2.8	~2.4	<6.7	<6.0
W-4	NBC-632,NBC-757	10/22/1996	22.85	0.95	21.18	20.1	14.8	~8.1	<6.0

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "~" indicates an estimated value. An "R" indicates that the result was determined unusable through data validation.
[b] The values listed multiplied by 10^{-9} will result in microcuries per milliliter.
[c] Sample was filtered in the field.

Table A-16. Groundwater Chemistry Data Collected At and Near the MMTS During 1996[a]

Sample Location	Ticket Number	Sample Date	Al (μg/L)	Alkalinity (as $CaCO_3$) (ppm)	Alpha (pCi/L)[b]	As (μg/L)	Beta (pCi/L)[b]	Ca (μg/L)	CDT[c] (μmhos/cm)	Cl (μg/L)	Co (μg/L)
31NE93-205	NBC-603	10/31/1996	~9.2	155	<7.73	34.5	<10.44	88000	1010	2480	<6.7
31SW91-03	NBC-780	10/22/1996	~15.2	439	917.16	66.1	245.46	246000	2960	93200	<6.7
31SW91-14	NBC-779	10/22/1996	<6.7	520	1511.62	49.1	470.07	224000	3690	138000	~8.0
31SW91-23	NBC-783	10/23/1996	109	473	554.40	<1.1	144.61	351000	4490	47900	<6.7
31SW91-35	NBD-913	04/11/1996	R	116	<184.04[d]	256	<189.05	R	12170	31900	<7.8
	NBC-777	10/23/1996	1740	122	106.85	139	<143.75	393000	11680	31300	<6.7
31SW91-50	NBF-175	04/11/1996	~150	>3100	~3140.47	193	660.64	248000	2120	80500	<7.8
	NBA-550	10/18/1996	979	438	2478.54	222	640.77	237000	2190	54300	<6.7
	NBC-776	10/18/1996	862	No Data	1936.93	216	647.52	237000	No Data	53600	<6.7
31SW91-55	NBF-173	04/11/1996	<10.0	3810	~41.51	<0.44	<39.90	267000	1674	45000	<7.8
	NBA-527	10/17/1996	624	317	26.22	2.6	<19.34	279000	1652	17800	<6.7
31SW93-199-1	NBC-605	10/31/1996	2970	No Data	No Data	7.7	No Data	20500	2390	38000	<6.7
31SW93-203-2	NBC-619	11/26/1996	92.6	374	<35.17	<1.1	<47.93	464000	3900	305000	<6.7
	NBC-621	11/26/1996	128	No Data	65.03	<1.1	<48.25	457000	No Data	304000	<6.7
36SE91-58	NBF-174	04/11/1996	~208	3071	<25.15[d]	<0.44	<39.40	322000	1785	13300	<7.8
	NBA-528	10/17/1996	~22.9	309	20.03	<1.1	<23.10	371000	1938	10600	<6.7
36SE91-61	NBC-620	11/26/1996	<6.7	514	765.93	5.1	227.41	327000	2970	184000	~7.5
36SE93-201-2	NBD-916	04/11/1996	R	740	~4620.67	R	942.67	R	7070	600000	R
	NBD-917	04/11/1996	~111	No Data	No Data	519	No Data	15300	No Data	No Data	<7.0
	NBC-778	10/21/1996	371	No Data	No Data	427	No Data	111000	6760	826000	8.9
82-07	NBC-800	10/31/1996	120	428	203.29	1.5	74.30	274000	2390	109000	<6.7
82-30B	NBD-914	04/11/1996	<10.0	430	~728.86	87.4	155.05	208000	2160	63700	<7.8
	NBD-915	04/11/1996	<10.0	No Data	~787.14	85.6	142.38	208000	No Data	64000	<7.8
	NBC-785	10/24/1996	<6.7	408	494.84	96.2	132.46	226000	2160	53600	<6.7
82-31B-E	NBC-784	10/23/1996	136	391	<33.53	<1.1	<47.86	566000	3040	33400	<6.7
82-40A	NBA-526	10/17/1996	<6.7	328	2905.49	75.4	1059.31	291000	3690	60700	81.6
82-42	NBC-786	10/24/1996	~8.6	282	39.16	4.2	<23.23	335000	1850	13000	<6.7
83-70	NBC-781	10/22/1996	~12.9	222	<4.54	<1.1	<5.76	51800	614	2900	<6.7

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "~" indicates an estimated value. An "R" indicates that the result was determined unusable through data validation.
[b] The values listed multiplied by 10^{-9} will result in microcuries per milliliter.
[c] Conductivity in micromhos per centimeter.
[d] Estimated.

Table A-16 (continued). Groundwater Chemistry Data Collected At and Near the MMTS During 1996[a]

Sample Location	Ticket Number	Sample Date	Al (μg/L)	Alkalinity (as $CaCO_3$) (ppm)	Alpha (pCi/L)[b]	As (μg/L)	Beta (pCi/L)[b]	Ca (μg/L)	CDT[c] (μmhos/cm)	Cl (μg/L)	Co (μg/L)
88-85	NBC-799	10/31/1996	278	441	196.81	14.7	76.22	273000	2280	94400	<6.7
92-01	NBC-645	10/28/1996	195	286	<21.46	1.2	<28.61	441000	2290	6530	<6.7
92-02	NBC-644	10/25/1996	~11.8	134	<3.91	3.7	<5.71	56000	385	1090	<6.7
92-03	NBC-646	10/29/1996	424	265	<7.74	<1.1	<9.57	169000	958	14300	<6.7
92-04	NBC-789	10/25/1996	~9.8	239	4.91	6.8	<5.79	70400	618	2680	<6.7
92-05	NBC-649	10/30/1996	7900	289	<11.36	1.7	<14.40	238000	1410	12900	<6.7
92-06	NBC-647	10/29/1996	<6.7	198	<4.47	2.3	<5.73	70300	552	1900	<6.7
92-07	NBC-614	11/01/1996	<6.7	400	613.47	14.5	182.63	259000	520	82500	<6.7
92-08	NBC-606	10/31/1996	<6.7	419	176.01	<1.1	118.20	288000	2240	91100	<6.7
	NBC-613	10/31/1996	<6.7	No Data	267.23	<1.1	103.00	281000	No Data	91400	<6.7
92-09	NBD-907	04/09/1996	~115	344	~173.11	<0.44	<49.02	280000	2390	96600	<7.8
	NBC-787	10/24/1996	~12.7	361	98.33	1.7	36.26	291000	2370	88900	<6.7
	NBC-788	10/24/1996	~22.3	No Data	90.36	1.7	<29.43	291000	No Data	88700	<6.7
92-10	NBD-906	04/09/1996	~21.0	195	<12.37[d]	<0.44	<13.29	77200	720	15800	<7.8
	NBC-643	10/24/1996	~13.8	202	<4.85	<1.1	6.05	76600	698	15400	<6.7
92-11	NBD-909	04/10/1996	~52.3	453	~1393.52	37.4	281.96	238000	2740	96100	<7.8
	NBC-782	10/22/1996	~37.4	346	778.09	39.3	184.90	251000	2560	79400	<6.7
92-12	NBD-920	04/12/1996	R	2900	~15.19	<0.44	<14.34	R	766	3740	<7.8
	NBC-601	10/29/1996	1280	270	<5.72	<1.1	<7.20	33600	756	3690	<6.7
92-13	NBC-648	10/29/1996	1100	325	6.25	28.0	<5.81	10800	681	4180	<6.7
93-01	NBD-918	04/12/1996	~18.6	224	<7.29[d]	~4.7	<9.94	69100	596	2390	<7.8
	NBC-602	10/30/1996	~12.6	203	5.97	6.4	<5.79	65300	590	2350	<6.7
95-01	NBD-856	02/13/1996	~26.8	206	<13.33[d]	~2.6	<12.23	39800	614	5200	~6.1
	NBD-901	04/08/1996	295	187	~9.79	<0.44	<9.45	39500	613	5170	<7.8
	NBA-102	07/23/1996	~106	197	4.80	~4.0	4.56	40100	485	5280	<6.6
	NBA-103	07/23/1996	~130	No Data	6.71	~5.2	<4.57	39600	No Data	5330	<6.6
	NBC-794	10/29/1996	~51.2	183	4.96	4.2	<5.77	37400	597	5290	<6.7

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "~" indicates an estimated value. An "R" indicates that the result was determined unusable through data validation.
[b] The values listed multiplied by 10^{-9} will result in microcuries per milliliter.
[c] Conductivity in micromhos per centimeter.
[d] Estimated.

Table A-16 (continued). Groundwater Chemistry Data Collected At and Near the MMTS During 1996[a]

Sample Location	Ticket Number	Sample Date	Al (μg/L)	Alkalinity (as $CaCO_3$) (ppm)	Alpha (pCi/L)[b]	As (μg/L)	Beta (pCi/L)[b]	Ca (μg/L)	CDT[c] (μmhos/cm)	Cl (μg/L)	Co (μg/L)
95-02	NBD-855	02/12/1996	<13.3	177	<13.20[d]	<1.1	<12.21	38000	611	5030	<5.6
	NBD-902	04/08/1996	<10.0	174	<8.75[d]	<0.44	<9.40	39000	614	5130	<7.8
	NBD-903	04/08/1996	<10.0	No Data	<8.58[d]	<0.44	<9.30	38600	No Data	5110	<7.8
	NBA-101	07/23/1996	~34.3	200	5.23	~2.6	<4.56	38900	592	5240	<6.6
	NBC-793	10/29/1996	<6.7	231	<4.40	<1.1	5.77	37000	611	5110	<6.7
95-03	NBD-858	02/13/1996	~117	237	<39.74[d]	<1.1	<40.10	167000	1679	82900	<5.6
	NBD-859	02/13/1996	~60.4	No Data	<39.29[d]	<1.1	<40.01	167000	No Data	82200	<5.6
	NBD-904	04/09/1996	274	252	<26.09[d]	<0.44	<30.87	167000	1690	80700	<7.8
	NBA-105	07/24/1996	~180	251	<9.09	~1.1	<11.45	168000	1613	79800	<6.6
	NBC-792	10/28/1996	~14.8	258	<12.58	<1.1	<16.45	165000	1602	79000	<6.7
95-04	NBD-857	02/13/1996	<13.3	236	<40.86[d]	~4.4	<40.47	174000	1735	88300	<5.6
	NBD-905	04/09/1996	<10.0	223	<27.03[d]	<0.44	<31.20	173000	1767	87400	<7.8
	NBA-104	07/24/1996	<31.2	300	<9.44	~5.5	<11.51	174000	1687	87200	<6.6
	NBC-791	10/28/1996	<6.7	262	13.30	3.4	<16.49	172000	1675	87400	<6.7
95-06	NBD-861	02/13/1996	R	292	<33.36[d]	<1.1	<25.38	R	1408	66900	<5.6
	NBD-910	04/10/1996	~176	300	~41.86	<0.44	<31.68	182000	1913	90100	<7.8
	NBA-112	07/26/1996	413	335	60.15	~5.7	17.74	200000	2080	95600	<6.6
	NBC-795	10/29/1996	1010	311	34.68	<1.1	<16.71	145000	1617	83100	<6.7
95-07	NBD-854	02/14/1996	R	1330	<58.72[d]	R	<49.57	R	2220	29300	R
	NBD-919	04/12/1996	R	No Data	<33.87[d]	R	<49.62	R	2270	26700	R
	NBA-110	07/25/1996	13800	1307	27.81	~2.3	<13.64	17700	2291	26100	<6.6
	NBC-650	10/29/1996	1060	1325	<19.05	3.7	<23.06	6650	2320	26600	<6.7
95-08	NBD-864	02/15/1996	~151	167	<11.92[d]	~8.3	<12.02	18000	460	2840	<5.6
	NBD-912	04/10/1996	~89.6	262	<13.45[d]	<0.44	<9.75	27600	618	5410	<7.8
	NBA-107	07/24/1996	~82.7	277	4.13	11.8	<4.59	28100	587	5340	<6.6
	NBC-797	10/30/1996	~45.7	293	<4.65	2.2	<5.77	26800	576	5320	<6.7

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "~" indicates an estimated value. An "R" indicates that the result was determined unusable through data validation.
[b] The values listed multiplied by 10^{-9} will result in microcuries per milliliter.
[c] Conductivity in micromhos per centimeter.
[d] Estimated.

Table A-16 (continued). Groundwater Chemistry Data Collected At and Near the MMTS During 1996[a]

Sample Location	Ticket Number	Sample Date	Al (μg/L)	Alkalinity (as $CaCO_3$) (ppm)	Alpha (pCi/L)[b]	As (μg/L)	Beta (pCi/L)[b]	Ca (μg/L)	CDT[c] (μmhos/cm)	Cl (μg/L)	Co (μg/L)
P92-02	NBD-863	02/14/1996	-145	434	<84.09[d]	<1.1	<81.17	356000	3250	168000	<5.6
	NBA-108	07/25/1996	233	396	88.06	-10.3	<23.43	340000	3010	149000	<6.6
	NBC-790	10/28/1996	<6.7	421	32.18	1.9	<38.44	368000	3240	180000	<6.7
P92-04	NBD-862	02/14/1996	-200	336	<64.47[d]	<1.1	<50.44	361000	2770	135000	-6.4
	NBD-911	04/10/1996	-47.8	308	<46.52[d]	<0.44	<46.98	372000	2970	138000	<7.8
	NBA-111	07/26/1996	-49.4	401	18.01	-6.4	<15.45	263000	2150	104000	<6.6
	NBC-796	10/29/1996	495	302	<21.32	1.1	<28.76	309000	2440	105000	<6.7
P92-09	NBA-109	07/25/1996	785	447	106.19	-1.9	<31.11	400000	4060	256000	<6.6
	NBC-798	10/30/1996	-21.2	No Data	No Data	1.8	No Data	528000	4700	355000	<6.7

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[b] The values listed multiplied by 10^{-9} will result in microcuries per milliliter.
[c] Conductivity in micromhos per centimeter.
[d] Estimated.

Table A-16 (continued). Groundwater Chemistry Data Collected At and Near the MMTS During 1996[a]

Sample Location	Ticket Number	Sample Date	Cu (μg/L)	DO[b] (mg/L)	Eh[c] (mV)	F (μg/L)	H_2O Depth (feet)	K (μg/L)	Mg (μg/L)	Mn (μg/L)	Mo (μg/L)
31NE93-205	NBC-603	10/31/1996	~1.9	0.26	No Data	~102	178.6	4690	24200	857	1.8
31SW91-03	NBC-780	10/22/1996	5.6	0.54	146	654	<53.1	33000	58600	7650	264
31SW91-14	NBC-779	10/22/1996	7.4	1.82	126	810	44.53	44500	63200	10500	493
31SW91-23	NBC-783	10/23/1996	9.9	3.33	122	1040	>14.4	5270	125000	124	286
31SW91-35	NBD-913	04/11/1996	~27.6	2.71	206	495	42.05	R	R	R	34000
	NBC-777	10/23/1996	36.0	5.50	195	508	42.88	27100	53400	753	34200
31SW91-50	NBF-175	04/11/1996	<3.3	1.20	-45	2380	5.4	25200	44500	2320	~48.6
	NBA-550	10/18/1996	14.3	4.51	-36	2480	6.12	27100	39800	1680	61.0
	NBC-776	10/18/1996	10.0	No Data	No Data	2500	No Data	26900	39700	1670	60.7
31SW91-55	NBF-173	04/11/1996	<3.3	0.44	054	~162	4.3	~4320	44400	1470	~4.4
	NBA-527	10/17/1996	4.2	0.73	-7	~168	4.92	5220	41900	1110	5.5
31SW93-199-1	NBC-605	10/31/1996	21.8	1.64	126	2990	48.60	9230	7300	64.3	136
31SW93-203-2	NBC-619	11/26/1996	5.0	0.92	125	547	10.03	11500	122000	65.7	2.1
	NBC-621	11/26/1996	4.2	No Data	No Data	543	No Data	11600	123000	65.5	1.5
36SE91-58	NBF-174	04/11/1996	<3.3	4.45	211	~109	5.1	~3760	49200	32.6	<0.56
	NBA-528	10/17/1996	~2.2	1.81	95	~125	5.86	5010	49300	489	2.7
36SE91-61	NBC-620	11/26/1996	5.2	1.02	215	647	13.66	13300	54400	262	37.2
36SE93-201-2	NBD-916	04/11/1996	R	0.54	-186	4180	7.84	R	R	R	R
	NBD-917	04/11/1996	~18.7	No Data	No Data	No Data	No Data	122000	5480	99.2	1460
	NBC-778	10/21/1996	37.9	2.79	-100	5270	11.79	11700	18600	722	1750
82-07	NBC-800	10/31/1996	5.3	4.93	84	492	No Data	8420	66500	31.7	42.2
82-30B	NBD-914	04/11/1996	<3.3	0.26	104	794	17.16	33800	41600	6020	166
	NBD-915	04/11/1996	<3.3	No Data	No Data	805	No Data	34800	41400	6010	159
	NBC-785	10/24/1996	~3.3	0.99	103	879	19.24	36200	41300	6000	158
82-31B-E	NBC-784	10/23/1996	5.0	2.28	115	~122	3.95	8420	128000	270	<1.1
82-40A	NBA-526	10/17/1996	7.2	1.59	-83	1440	22.56	19900	36100	4890	644
82-42	NBC-786	10/24/1996	7.6	1.10	88	~151	38.30	5190	49400	355	2.9
83-70	NBC-781	10/22/1996	~1.5	0.14	-75	~155	33.98	2650	9920	261	1.1

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[b] Dissolved oxygen.
[c] Oxidation potential in millivolts.

Table A-16 (continued). Groundwater Chemistry Data Collected At and Near the MMTS During 1996[a]

Sample Location	Ticket Number	Sample Date	Cu (µg/L)	DO[b] (mg/L)	Eh[c] (mV)	F (µg/L)	H_2O Depth (feet)	K (µg/L)	Mg (µg/L)	Mn (µg/L)	Mo (µg/L)
88-85	NBC-799	10/31/1996	3.6	1.72	77	374	8.40	8650	58600	39.0	50.7
92-01	NBC-645	10/28/1996	3.7	3.95	80	287	22.10	2660	71600	7.0	1.6
92-02	NBC-644	10/25/1996	-1.7	1.14	45	-141	186.20	1160	7290	455	2.0
92-03	NBC-646	10/29/1996	3.5	3.81	108	-147	10.30	1630	20100	27.6	2.3
92-04	NBC-789	10/25/1996	-2.1	2.25	61	-145	172.15	2230	10700	446	6.8
92-05	NBC-649	10/30/1996	65.2	4.69	No Data	-149	17.10	4650	33300	170	2.9
92-06	NBC-647	10/29/1996	-2.6	3.82	No Data	-152	109.60	1840	9370	407	2.2
92-07	NBC-614	11/01/1996	4.7	220	No Data	471	19.5	19400	51900	947	154
92-08	NBC-606	10/31/1996	3.8	0.94	100	326	10.14	11700	51800	1060	81.6
	NBC-613	10/31/1996	3.4	No Data	No Data	334	No Data	11500	51100	1040	83.0
92-09	NBD-907	04/09/1996	<3.3	0.83	19	-182	10.85	<1340	71400	130	<0.56
	NBC-787	10/24/1996	-2.9	1.04	26	-196	11.10	1500	68800	163	2.5
	NBC-788	10/24/1996	-2.8	No Data	No Data	-198	No Data	1650	69500	169	2.5
92-10	NBD-906	04/09/1996	<3.3	0.59	-065	-112	12.84	-2500	13800	355	<0.56
	NBC-643	10/24/1996	5.4	0.52	-58	-143	12.10	2750	12500	336	1.6
92-11	NBD-909	04/10/1996	<3.3	0.60	188	589	No Data	28000	56000	4210	236
	NBC-782	10/22/1996	4.6	0.61	110	670	>13	27200	51000	4310	199
92-12	NBD-920	04/12/1996	<3.3	No Data	No Data	-61.0	52.9	R	R	R	76.4
	NBC-601	10/29/1996	-3.1	No Data	No Data	457	53.15	3600	9080	15.6	59.5
92-13	NBC-648	10/29/1996	5.0	No Data	No Data	1210	106.30	3010	2780	19.5	33.7
93-01	NBD-918	04/12/1996	<3.3	0.20	74	-138	106.24	-1450	11300	384	<0.56
	NBC-602	10/30/1996	-1.5	2.00	No Data	-177	107.35	2210	10000	364	2.1
95-01	NBD-856	02/13/1996	<4.4	0.18	225	317	4.4	-3080	11700	280	<1.1
	NBD-901	04/08/1996	<3.3	2.99	-32	247	4.48	-2150	11800	249	<0.56
	NBA-102	07/23/1996	<3.7	0.68	-065	302	5.2	-2720	12100	211	-1.5
	NBA-103	07/23/1996	<3.7	No Data	No Data	205	No Data	-3090	11800	210	-1.5
	NBC-794	10/29/1996	-2.8	0.52	84	273	4.58	2840	10300	205	<1.1

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "-" indicates an estimated value. An "R" indicates that the result was determined unusable through data validation.
[b] Dissolved oxygen.
[c] Oxidation potential in millivolts.

Table A-16 (continued). Groundwater Chemistry Data Collected At and Near the MMTS During 1996[a]

Sample Location	Ticket Number	Sample Date	Cu (µg/L)	DO[b] (mg/L)	Eh[c] (mV)	F (µg/L)	H_2O Depth (feet)	K (µg/L)	Mg (µg/L)	Mn (µg/L)	Mo (µg/L)
95-02	NBD-855	02/12/1996	<4.4	0.17	228	235	2.4	-2210	11600	187	<1.1
	NBD-902	04/08/1996	<3.3	0.41	-33	266	2.54	-2170	11800	195	<0.56
	NBD-903	04/08/1996	<3.3	No Data	No Data	296	No Data	-2070	11700	193	<0.56
	NBA-101	07/23/1996	<3.7	0.12	-75	253	3.45	-3600	11900	186	-1.2
	NBC-793	10/29/1996	-2.5	0.56	40	254	3.00	2770	10200	168	<1.1
95-03	NBD-858	02/13/1996	<4.4	0.17	216	-170	3.2	-3240	59000	432	<1.1
	NBD-859	02/13/1996	<4.4	No Data	No Data	-158	No Data	-3170	58900	434	<1.1
	NBD-904	04/09/1996	-3.6	1.43	-80	-170	3.26	-2490	59200	421	-6.5
	NBA-105	07/24/1996	<3.7	0.11	-75	135	4.72	-3030	60400	411	-7.1
	NBC-792	10/28/1996	-2.5	1.32	-53	-184	3.44	3230	51600	400	6.8
95-04	NBD-857	02/13/1996	<4.4	0.24	230	-179	4.0	-3330	58700	501	-10.5
	NBD-905	04/09/1996	<3.3	0.33	70	-150	4.07	-3100	58200	481	-6.6
	NBA-104	07/24/1996	<3.7	0.12	-14	152	4.9	-4600	59800	465	-6.9
	NBC-791	10/28/1996	-2.9	4.84	53	-180	4.09	3370	51700	455	6.1
95-06	NBD-861	02/13/1996	<4.4	No Data	244	-165	74.6	R	R	R	<1.1
	NBD-910	04/10/1996	<3.3	2.54	173	-128	70.35	-5370	51500	355	<0.56
	NBA-112	07/26/1996	<3.7	0.63	73	124	67.81	6750	58300	432	-5.0
	NBC-795	10/29/1996	23.9	2.96	70	-130	69.66	5660	37500	253	2.8
95-07	NBD-854	02/14/1996	R	No Data	No Data	3240	101.7	R	R	R	R
	NBD-919	04/12/1996	R	No Data	No Data	2990	69.8	R	R	R	R
	NBA-110	07/25/1996	<3.7	0.98	-110	3060	69.8	10000	10300	142	-11.4
	NBC-650	10/29/1996	7.0	No Data	No Data	2980	69.65	5370	3400	39.3	1.2
95-08	NBD-864	02/15/1996	<4.4	1.24	235	287	128.1	-2750	-5320	86.5	<1.1
	NBD-912	04/10/1996	<3.3	0.32	108	793	127.80	-3040	9260	66.0	<0.56
	NBA-107	07/24/1996	<3.7	0.28	43	881	128.5	-4430	9390	62.6	-1.3
	NBC-797	10/30/1996	-2.8	0.65	48	829	128.29	3440	8140	54.8	<1.1

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "-" indicates an estimated value. An "R" indicates that the result was determined unusable through data validation.
[b] Dissolved oxygen.
[c] Oxidation potential in millivolts.

Table A-16 (continued). Groundwater Chemistry Data Collected At and Near the MMTS During 1996[a]

Sample Location	Ticket Number	Sample Date	Cu (µg/L)	DO[b] (mg/L)	Eh[c] (mV)	F (µg/L)	H_2O Depth (feet)	K (µg/L)	Mg (µg/L)	Mn (µg/L)	Mo (µg/L)
P92-02	NBD-863	02/14/1996	<4.4	0.26	223	264	11.8	~1370	137000	196	<1.1
	NBA-108	07/25/1996	<3.7	0.31	45	454	13.84	~1700	133000	192	~3.4
	NBC-790	10/28/1996	~3.0	0.91	36	251	12.08	1810	125000	189	2.9
P92-04	NBD-862	02/14/1996	<4.4	No Data	231	265	24.1	<1280	122000	~4.3	<1.1
	NBD-911	04/10/1996	<3.3	4.76	153	251	24.18	~1620	133000	~2.8	<0.56
	NBA-111	07/26/1996	<3.7	6.37	103	336	22.81	~1970	81800	~1.9	~1.4
	NBC-796	10/29/1996	4.4	5.23	76	291	23.86	1790	93000	11.9	<1.1
P92-09	NBA-109	07/25/1996	<3.7	No Data	144	846	15.40	~3060	188000	31.5	~22.7
	NBC-798	10/30/1996	5.8	No Data	No Data	936	15.72	3010	217000	8.2	16.6

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "~" indicates an estimated value. An "R" indicates that the result was determined unusable through data validation.
[b] Dissolved oxygen.
[c] Oxidation potential in millivolts.

Table A-16 (continued). Groundwater Chemistry Data Collected At and Near the MMTS During 1996[a]

Sample Location	Ticket Number	Sample Date	Na (μg/L)	NH_4 (μg/L)	Ni (μg/L)	NO_2 (μg/L)	NO_3+NO_2-N[b] (μg/L)	Pb (μg/L)	Pb-210 (pCi/L)[c]	pH	Ra-226 (pCi/L)[c]
31NE93-205	NBC-603	10/31/1996	92100	267	No Data	No Data	-21.3	-1.4	<1.07	6.61	1.56
31SW91-03	NBC-780	10/22/1996	346000	9010	No Data	No Data	567	<1.1	6.38	6.41	0.14
31SW91-14	NBC-779	10/22/1996	509000	19400	No Data	No Data	1290	<1.1	7.41	6.82	<0.11
31SW91-23	NBC-783	10/23/1996	577000	8300	No Data	-113	38800	<1.1	<3.59	6.98	0.29
31SW91-35	NBD-913	04/11/1996	R	167000	No Data	No Data	263000	R	3.40	8.77	6.51
	NBC-777	10/23/1996	2520000	148000	No Data	No Data	256000	-1.2	2.11	8.93	3.29
31SW91-50	NBF-175	04/11/1996	180000	4980	No Data	No Data	<7.0	<0.44	45.14	7.32	26.52
	NBA-550	10/18/1996	198000	4980	No Data	No Data	-22.9	1.7	42.75	7.09	36.10
	NBC-776	10/18/1996	196000	5110	No Data	No Data	-21.7	15.3	40.54	No Data	41.97
31SW91-55	NBF-173	04/11/1996	62200	22.2	No Data	No Data	652	<0.44	<1.40	7.13	0.22
	NBA-527	10/17/1996	50100	152	No Data	No Data	-77.5	5.3	<1.34	6.28	0.20
31SW93-199-1	NBC-605	10/31/1996	861000	250	No Data	No Data	39500	2.7	No Data	8.04	No Data
31SW93-203-2	NBC-619	11/26/1996	314000	85.0	No Data	No Data	1110	<1.1	2.51	6.10	0.67
	NBC-621	11/26/1996	317000	118	No Data	No Data	1110	<1.1	1.66	No Data	0.41
36SE91-58	NBF-174	04/11/1996	43200	-14.4	No Data	No Data	-470	<0.44	<1.40	6.80	0.40
	NBA-528	10/17/1996	44000	-17.6	No Data	No Data	-372	<1.1	<1.24	6.82	0.21
36SE91-61	NBC-620	11/26/1996	285000	22.7	No Data	No Data	736	<1.1	11.67	6.14	0.38
36SE93-201-2	NBD-916	04/11/1996	R	765	No Data	No Data	<7.0	R	17.08	8.96	1.15
	NBD-917	04/11/1996	1420000	No Data	No Data	No Data	No Data	-1.3	No Data	No Data	No Data
	NBC-778	10/21/1996	1570000	105	No Data	No Data	-25.6	1.9	No Data	8.12	No Data
82-07	NBC-800	10/31/1996	174000	-4.6	No Data	No Data	1340	<1.1	2.19	6.71	0.27
82-30B	NBD-914	04/11/1996	207000	2680	No Data	No Data	<7.0	<0.44	<2.08	6.89	0.44
	NBD-915	04/11/1996	205000	2550	No Data	No Data	<7.0	<0.44	9.24	No Data	0.37
	NBC-785	10/24/1996	197000	2520	No Data	No Data	-18.0	<1.1	45.71	7.06	0.37
82-31B-E	NBC-784	10/23/1996	195000	-11.1	No Data	No Data	-371	<1.1	2.41	6.73	0.35
82-40A	NBA-526	10/17/1996	522000	4840	No Data	No Data	-20.8	<1.1	29.00	6.83	9.92
82-42	NBC-786	10/24/1996	52700	-6.7	No Data	No Data	-261	<1.1	2.24	6.80	0.26
83-70	NBC-781	10/22/1996	56400	202	No Data	No Data	<7.0	4.4	<1.15	7.19	0.99

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "-" indicates an estimated value. An "R" indicates that the result was determined unusable through data validation.
[b] (Nitrate + nitrite) as nitrogen.
[c] The values listed multiplied by 10^{-9} will result in microcuries per milliliter.

Table A-16 (continued). Groundwater Chemistry Data Collected At and Near the MMTS During 1996[a]

Sample Location	Ticket Number	Sample Date	Na (μg/L)	NH_4 (μg/L)	Ni (μg/L)	NO_2 (μg/L)	NO_3+NO_2-N[b] (μg/L)	Pb (μg/L)	Pb-210 (pCi/L)[c]	pH	Ra-226 (pCi/L)[c]
88-85	NBC-799	10/31/1996	165000	~11.1	No Data	No Data	1270	<1.1	<3.19	6.93	0.30
92-01	NBC-645	10/28/1996	47800	~13.3	No Data	No Data	~40.3	<1.1	<1.08	6.97	0.15
92-02	NBC-644	10/25/1996	10200	39.3	No Data	No Data	<7.0	<1.1	<3.16	7.39	0.54
92-03	NBC-646	10/29/1996	27800	~8.9	No Data	No Data	~249	<1.1	<1.07	7.00	0.33
92-04	NBC-789	10/25/1996	42100	118	No Data	No Data	~22.5	<1.1	<1.04	7.54	0.70
92-05	NBC-649	10/30/1996	36400	~13.3	No Data	No Data	180	9.4	<1.12	6.82	0.13
92-06	NBC-647	10/29/1996	28300	135	No Data	No Data	<7.0	<1.1	<1.06	7.60	0.44
92-07	NBC-614	11/01/1996	232000	791	No Data	No Data	744	<1.1	3.28	6.68	0.24
92-08	NBC-606	10/31/1996	161000	~8.9	No Data	No Data	~379	<1.1	<1.20	6.51	0.13
	NBC-613	10/31/1996	158000	~8.9	No Data	No Data	~383	<1.1	<1.15	No Data	<0.11
92-09	NBD-907	04/09/1996	187000	53.0	No Data	No Data	~9.8	<0.44	<1.27	6.92	0.12
	NBC-787	10/24/1996	178000	50.2	No Data	No Data	~19.2	<1.1	1.74	7.08	0.14
	NBC-788	10/24/1996	179000	50.2	No Data	No Data	~20.1	<1.1	1.45	No Data	0.11
92-10	NBD-906	04/09/1996	53000	194	No Data	No Data	<7.0	<0.44	<1.17	7.21	1.55
	NBC-643	10/24/1996	50200	165	No Data	No Data	~22.0	5.0	<1.14	7.48	1.46
92-11	NBD-909	04/10/1996	310000	4920	No Data	No Data	1060	<0.44	<1.94	6.82	0.11
	NBC-782	10/22/1996	270000	4930	No Data	No Data	661	<1.1	5.86	6.92	<0.13
92-12	NBD-920	04/12/1996	R	~11.9	No Data	No Data	953	R	<1.46	7.57	0.34
	NBC-601	10/29/1996	118000	~13.3	No Data	No Data	1180	~1.2	<1.07	7.42	0.27
92-13	NBC-648	10/29/1996	131000	183	No Data	No Data	996	~1.2	<1.13	9.06	0.34
93-01	NBD-918	04/12/1996	39300	169	No Data	No Data	<7.0	<0.44	<1.31	7.46	0.87
	NBC-602	10/30/1996	42700	172	No Data	No Data	~20.4	<1.1	<1.10	7.52	1.01
95-01	NBD-856	02/13/1996	78200	145	<10.0	No Data	<10.0	<1.1	0.63	7.18	2.81
	NBD-901	04/08/1996	73600	146	No Data	No Data	<7.0	<0.44	<1.18	7.18	3.19
	NBA-102	07/23/1996	76300	137	No Data	No Data	~7.2	5.8	<1.19	7.01	2.20
	NBA-103	07/23/1996	76100	140	No Data	No Data	<7.0	~1.2	<1.19	No Data	2.22
	NBC-794	10/29/1996	67800	139	No Data	No Data	~18.7	<1.1	<1.06	7.17	2.08

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "~" indicates an estimated value. An "R" indicates that the result was determined unusable through data validation.
[b] (Nitrate + nitrite) as nitrogen.
[c] The values listed multiplied by 10^{-9} will result in microcuries per milliliter.

Table A-16 (continued). Groundwater Chemistry Data Collected At and Near the MMTS During 1996[a]

Sample Location	Ticket Number	Sample Date	Na (µg/L)	NH_4 (µg/L)	Ni (µg/L)	NO_2 (µg/L)	NO_3+NO_2-N[b] (µg/L)	Pb (µg/L)	Pb-210 (pCi/L)[c]	pH	Ra-226 (pCi/L)[c]
95-02	NBD-855	02/12/1996	78200	158	<10.0	No Data	<10.0	<1.1	1.68	7.52	1.03
	NBD-902	04/08/1996	75100	143	No Data	No Data	~10.9	<0.44	<1.14	7.17	1.83
	NBD-903	04/08/1996	74700	140	No Data	No Data	~9.2	<0.44	1.23	No Data	1.74
	NBA-101	07/23/1996	76700	135	No Data	No Data	<7.0	~0.52	<1.18	7.10	1.40
	NBC-793	10/29/1996	67600	122	No Data	No Data	~43.5	<1.1	<1.08	7.45	1.00
95-03	NBD-858	02/13/1996	128000	308	<10.0	No Data	~16.8	<1.1	1.74	7.17	1.88
	NBD-859	02/13/1996	128000	283	<10.0	No Data	~18.2	<1.1	1.62	No Data	1.92
	NBD-904	04/09/1996	124000	223	No Data	No Data	<7.0	<0.44	<1.18	6.98	2.37
	NBA-105	07/24/1996	126000	195	No Data	No Data	<7.0	~1.3	<1.21	6.97	2.57
	NBC-792	10/28/1996	110000	228	No Data	No Data	<7.0	<1.1	<1.05	7.32	1.96
95-04	NBD-857	02/13/1996	138000	298	<10.0	No Data	<10.0	<1.1	0.43	7.06	2.09
	NBD-905	04/09/1996	134000	315	No Data	No Data	<7.0	<0.44	<1.17	7.00	1.89
	NBA-104	07/24/1996	136000	266	No Data	No Data	<7.0	~0.82	<1.22	7.00	2.24
	NBC-791	10/28/1996	119000	237	No Data	No Data	~19.1	<1.1	<1.03	6.99	2.04
95-06	NBD-861	02/13/1996	R	420	<10.0	No Data	<10.0	R	1.43	7.36	1.28
	NBD-910	04/10/1996	196000	421	No Data	No Data	~13.6	<0.44	<1.23	7.27	1.21
	NBA-112	07/26/1996	215000	439	No Data	No Data	~27.4	~0.88	<1.26	6.98	1.08
	NBC-795	10/29/1996	146000	207	No Data	No Data	~245	5.0	<1.01	7.26	0.98
95-07	NBD-854	02/14/1996	R	1090	R	No Data	90.6	R	0.78	8.63	1.38
	NBD-919	04/12/1996	R	377	No Data	No Data	<7.0	R	<1.32	7.99	1.27
	NBA-110	07/25/1996	608000	508	No Data	No Data	~7.6	8.4	<1.22	7.87	1.95
	NBC-650	10/29/1996	608000	387	No Data	No Data	~27.9	<1.1	<1.06	7.67	1.29
95-08	NBD-864	02/15/1996	89200	245	<10.0	No Data	<10.0	<1.1	0.74	7.56	0.52
	NBD-912	04/10/1996	96800	251	No Data	No Data	~15.9	<0.44	<1.18	7.61	1.05
	NBA-107	07/24/1996	98200	229	No Data	No Data	~61.9	8.0	<1.13	7.65	0.91
	NBC-797	10/30/1996	87600	194	No Data	No Data	~89.5	<1.1	<1.08	7.95	0.71

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "~" indicates an estimated value. An "R" indicates that the result was determined unusable through data validation.
[b] (Nitrate + nitrite) as nitrogen.
[c] The values listed multiplied by 10^{-9} will result in microcuries per milliliter.

Table A-16 (continued). Groundwater Chemistry Data Collected At and Near the MMTS During 1996[a]

Sample Location	Ticket Number	Sample Date	Na (μg/L)	NH_4 (μg/L)	Ni (μg/L)	NO_2 (μg/L)	NO_3+NO_2-N[b] (μg/L)	Pb (μg/L)	Pb-210 (pCi/L)[c]	pH	Ra-226 (pCi/L)[c]
P92-02	NBD-863	02/14/1996	295000	55.0	<10.0	No Data	-15.2	<1.1	0.43	7.04	0.35
	NBA-108	07/25/1996	268000	32.2	No Data	No Data	<7.0	-1.4	<1.17	6.76	0.17
	NBC-790	10/28/1996	242000	21.9	No Data	No Data	-26.4	<1.1	<1.16	7.03	0.37
P92-04	NBD-862	02/14/1996	167000	37.5	<10.0	No Data	4980	6.6	0.36	7.30	0.12
	NBD-911	04/10/1996	163000	32.4	No Data	No Data	5370	<0.44	<1.22	6.78	0.85
	NBA-111	07/26/1996	150000	124	No Data	No Data	5120	-0.66	<1.17	6.67	0.21
	NBC-796	10/29/1996	138000	-13.3	No Data	No Data	4700	<1.1	<1.08	6.85	0.09
P92-09	NBA-109	07/25/1996	407000	132	No Data	No Data	2050	-1.2	<1.29	6.96	0.24
	NBC-798	10/30/1996	476000	-11.1	No Data	No Data	1170	-1.2	No Data	7.92	No Data

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "-" indicates an estimated value. An "R" indicates that the result was determined unusable through data validation.
[b] (Nitrate + nitrite) as nitrogen.
[c] The values listed multiplied by 10^{-9} will result in microcuries per milliliter.

Table A-16 (continued). Groundwater Chemistry Data Collected At and Near the MMTS During 1996[a]

Sample Location	Ticket Number	Sample Date	Rn-222 (pCi/L)[b]	Sb (μg/L)	Se (μg/L)	Sn (μg/L)	SO_4 (μg/L)	TDS[c] (mg/L)	Temperature (degrees C)	Th-230 (pCi/L)[b]	Turbidity (NTU)[d]
31NE93-205	NBC-603	10/31/1996	112	No Data	<2.2	No Data	371000	738	13.1	<0.09	0.72
31SW91-03	NBC-780	10/22/1996	917	No Data	12.4	No Data	1070000	2210	10.9	0.15	2.45
31SW91-14	NBC-779	10/22/1996	1258	No Data	8.3	No Data	1370000	2730	10.6	<0.08	0.51
31SW91-23	NBC-783	10/23/1996	369	No Data	9.5	No Data	1900000	3680	11.2	<0.11	2.23
31SW91-35	NBD-913	04/11/1996	5627	No Data	-395	No Data	5820000	10100	8.0	<0.07	16.9
	NBC-777	10/23/1996	1975	No Data	402	No Data	5850000	10000	6.9	<0.10	18.5
31SW91-50	NBF-175	04/11/1996	181967	No Data	-2.3	No Data	674000	1590	7.9	<0.17	3.80
	NBA-550	10/18/1996	139947	No Data	<2.2	No Data	723000	1650	13.5	0.15	23.4
	NBC-776	10/18/1996	144315	No Data	<2.2	No Data	723000	1640	No Data	0.10	No Data
31SW91-55	NBF-173	04/11/1996	868	No Data	-1.5	No Data	571000	1280	7.7	<0.11	0.99
	NBA-527	10/17/1996	1059	No Data	<2.2	No Data	630000	1330	11.3	0.09	11.3
31SW93-199-1	NBC-605	10/31/1996	51	No Data	<2.2	No Data	476000	4790	9.9	No Data	29.1
31SW93-203-2	NBC-619	11/26/1996	2026	No Data	11.5	No Data	1590000	3260	11.0	<0.05	2.84
	NBC-621	11/26/1996	1894	No Data	8.8	No Data	1590000	3250	No Data	<0.07	No Data
36SE91-58	NBF-174	04/11/1996	830	No Data	-1.3	No Data	762000	1480	7.4	<0.11	4.35
	NBA-528	10/17/1996	1074	No Data	<2.2	No Data	866000	1650	11.8	<0.13	1.85
36SE91-61	NBC-620	11/26/1996	934	No Data	4.8	No Data	961000	2230	12.3	<0.04	1.78
36SE93-201-2	NBD-916	04/11/1996	1081	No Data	R	No Data	1730000	4830	9.2	1.19	16.4
	NBD-917	04/11/1996	No Data	No Data	-80.2	No Data	No Data	No Data	No Data	No Data	No Data
	NBC-778	10/21/1996	278	No Data	44.9	No Data	2200000	5280	13.7	No Data	4.17
82-07	NBC-800	10/31/1996	622	No Data	26.3	No Data	792000	1840	11.0	0.136	1.21
82-30B	NBD-914	04/11/1996	2330	No Data	-16.4	No Data	666000	1570	9.5	<0.08	0.35
	NBD-915	04/11/1996	2297	No Data	-15.9	No Data	662000	1540	No Data	<0.09	No Data
	NBC-785	10/24/1996	3658	No Data	18.0	No Data	719000	1610	10.1	<0.08	0.55
82-31B-E	NBC-784	10/23/1996	1265	No Data	<2.2	No Data	1790000	3250	11.8	<0.09	4.34
82-40A	NBA-526	10/17/1996	35953	No Data	<2.2	No Data	1450000	2810	11.5	0.37	1.20
82-42	NBC-786	10/24/1996	1417	No Data	3.4	No Data	802000	1540	9.7	<0.06	0.65
83-70	NBC-781	10/22/1996	338	No Data	<2.2	No Data	101000	360	11.3	0.18	1.03

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "-" indicates an estimated value. An "R" indicates that the result was determined unusable through data validation.
[b] The values listed multiplied by 10^{-9} will result in microcuries per milliliter.
[c] Total dissolved solids.
[d] Nephelometric turbidity units.

Table A-16 (continued). Groundwater Chemistry Data Collected At and Near the MMTS During 1996[a]

Sample Location	Ticket Number	Sample Date	Rn-222 (pCi/L)[b]	Sb (μg/L)	Se (μg/L)	Sn (μg/L)	SO_4 (μg/L)	TDS[c] (mg/L)	Temperature (degrees C)	Th-230 (pCi/L)[b]	Turbidity (NTU)[d]
88-85	NBC-799	10/31/1996	1343	No Data	8.7	No Data	762000	1790	11.5	<0.116	3.43
92-01	NBC-645	10/28/1996	688	No Data	<2.2	No Data	1140000	2060	8.9	<0.109	3.56
92-02	NBC-644	10/25/1996	142	No Data	<2.2	No Data	49300	225	10.1	<0.09	0.30
92-03	NBC-646	10/29/1996	772	No Data	<2.2	No Data	266000	732	10.2	<0.05	31.7
92-04	NBC-789	10/25/1996	90	No Data	<2.2	No Data	109000	380	10.3	<0.09	0.93
92-05	NBC-649	10/30/1996	327	No Data	<2.2	No Data	450000	1050	9.0	<0.09	33.4
92-06	NBC-647	10/29/1996	54	No Data	<2.2	No Data	91600	352	10.1	0.06	3.75
92-07	NBC-614	11/01/1996	934	No Data	9.5	No Data	869000	1870	11.1	0.26	0.28
92-08	NBC-606	10/31/1996	1166	No Data	17.0	No Data	757000	1760	11.6	<0.117	0.55
	NBC-613	10/31/1996	1145	No Data	17.8	No Data	759000	1730	No Data	0.135	No Data
92-09	NBD-907	04/09/1996	314	No Data	<1.1[e]	No Data	871000	1850	8.8	<0.07	0.45
	NBC-787	10/24/1996	372	No Data	<2.2	No Data	901000	1910	12.1	<0.08	0.53
	NBC-788	10/24/1996	433	No Data	<2.2	No Data	900000	1900	No Data	<0.06	No Data
92-10	NBD-906	04/09/1996	163	No Data	<1.1[e]	No Data	144000	442	10.0	<0.09	2.52
	NBC-643	10/24/1996	167	No Data	<2.2	No Data	143000	850	9.9	<0.07	2.00
92-11	NBD-909	04/10/1996	747	No Data	~9.1	No Data	911000	2020	9.6	<0.11	1.26
	NBC-782	10/22/1996	962	No Data	10.0	No Data	904000	1930	12.5	<0.11	2.03
92-12	NBD-920	04/12/1996	60	No Data	~2.8	No Data	108000	470	10.7	<0.12	40.5
	NBC-601	10/29/1996	24	No Data	<2.2	No Data	113000	495	9.6	<0.08	>1000
92-13	NBC-648	10/29/1996	221	No Data	<2.2	No Data	23800	412	9.8	0.06	554
93-01	NBD-918	04/12/1996	103	No Data	<1.1[e]	No Data	101000	348	11.3	<0.10	3.69
	NBC-602	10/30/1996	103	No Data	<2.2	No Data	94100	395	10.5	0.18	2.61
95-01	NBD-856	02/13/1996	977	<1.1	<2.2[e]	<1.1	113000	345	10.0	<0.80	1.76
	NBD-901	04/08/1996	990	No Data	<1.1[e]	No Data	113000	375	11.5	<0.07	3.91
	NBA-102	07/23/1996	634	No Data	<1.7	No Data	112000	370	16.4	0.04	3.60
	NBA-103	07/23/1996	659	No Data	<1.7	No Data	112000	373	No Data	0.03	No Data
	NBC-794	10/29/1996	725	No Data	<2.2	No Data	115000	378	11.9	<0.08	0.77

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "~" indicates an estimated value. An "R" indicates that the result was determined unusable through data validation.
[b] The values listed multiplied by 10^{-9} will result in microcuries per milliliter.
[c] Total dissolved solids.
[d] Nephelometric turbidity units.
[e] Estimated.

Table A-16 (continued). Groundwater Chemistry Data Collected At and Near the MMTS During 1996[a]

Sample Location	Ticket Number	Sample Date	Rn-222 (pCi/L)[b]	Sb (µg/L)	Se (µg/L)	Sn (µg/L)	SO_4 (µg/L)	TDS[c] (mg/L)	Temperature (degrees C)	Th-230 (pCi/L)[b]	Turbidity (NTU)[d]
95-02	NBD-855	02/12/1996	206	~1.1	~8.1	<1.1	114000	360	11.3	<0.80	2.17
	NBD-902	04/08/1996	197	No Data	~3.7	No Data	113000	367	11.8	<0.14	3.82
	NBD-903	04/08/1996	184	No Data	~4.2	No Data	113000	373	No Data	<0.12	No Data
	NBA-101	07/23/1996	159	No Data	<1.7	No Data	112000	363	14.5	<0.05	1.01
	NBC-793	10/29/1996	220	No Data	<2.2	No Data	114000	382	11.7	0.11	0.62
95-03	NBD-858	02/13/1996	171	<1.1	<2.2[e]	<1.1	535000	1180	10.4	<0.80	1.18
	NBD-859	02/13/1996	176	<1.1	<2.2[e]	<1.1	534000	1210	No Data	<0.80	No Data
	NBD-904	04/09/1996	207	No Data	<1.1[e]	No Data	535000	1210	10.1	<0.08	4.53
	NBA-105	07/24/1996	184	No Data	<1.7	No Data	527000	1190	14.6	0.06	2.86
	NBC-792	10/28/1996	217	No Data	<2.2	No Data	522000	1170	11.6	0.12	1.29
95-04	NBD-857	02/13/1996	118	<1.1	<2.2[e]	<1.1	555000	1230	11.0	<0.80	1.70
	NBD-905	04/09/1996	107	No Data	<1.1[e]	No Data	557000	1270	11.7	<0.08	3.02
	NBA-104	07/24/1996	121	No Data	<1.7	No Data	552000	1240	12.4	0.08	1.34
	NBC-791	10/28/1996	119	No Data	<2.2	No Data	549000	1230	10.8	0.20	0.69
95-06	NBD-861	02/13/1996	103	<1.1	<2.2[e]	<1.1	512000	1060	14.3	<0.80	22.9
	NBD-910	04/10/1996	93	No Data	~1.3	No Data	692000	1460	13.9	<0.07	4.90
	NBA-112	07/26/1996	58	No Data	<1.7	No Data	726000	1580	15.0	0.04	6.68
	NBC-795	10/29/1996	64	No Data	<2.2	No Data	628000	1170	11.5	<0.09	3.96
95-07	NBD-854	02/14/1996	30	R	R	R	18900	1550	11.0	<0.80	>1000
	NBD-919	04/12/1996	69	No Data	R	No Data	11300	1520	11.6	<0.11	>1000
	NBA-110	07/25/1996	76	No Data	<1.7	No Data	10800	1510	17.8	0.03	298
	NBC-650	10/29/1996	36	No Data	<2.2	No Data	1710	1540	10.5	0.08	486
95-08	NBD-864	02/15/1996	194	<1.1	<2.2[e]	<1.1	72100	295	13.7	<0.80	3.97
	NBD-912	04/10/1996	163	No Data	<1.1[e]	No Data	38000	365	13.1	<0.09	3.66
	NBA-107	07/24/1996	162	No Data	<1.7	No Data	34700	345	15.5	<0.04	2.12
	NBC-797	10/30/1996	173	No Data	<2.2	No Data	33400	352	12.0	<0.10	4.20

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "~" indicates an estimated value. An "R" indicates that the result was determined unusable through data validation.
[b] The values listed multiplied by 10^{-9} will result in microcuries per milliliter.
[c] Total dissolved solids.
[d] Nephelometric turbidity units.
[e] Estimated.

Table A-16 (continued). Groundwater Chemistry Data Collected At and Near the MMTS During 1996[a]

Sample Location	Ticket Number	Sample Date	Rn-222 (pCi/L)[b]	Sb (μg/L)	Se (μg/L)	Sn (μg/L)	SO_4 (μg/L)	TDS[c] (mg/L)	Temperature (degrees C)	Th-230 (pCi/L)[b]	Turbidity (NTU)[d]
P92-02	NBD-863	02/14/1996	367	<1.1	<2.2[e]	<1.1	1320000	2770	11.8	<0.80	3.48
	NBA-108	07/25/1996	313	No Data	<1.7	No Data	1250000	2590	13.7	0.03	2.18
	NBC-790	10/28/1996	412	No Data	<2.2	No Data	1340000	2710	11.4	<0.06	0.98
P92-04	NBD-862	02/14/1996	49	~3.3	~6.1	~1.3	1140000	2350	10.6	<0.80	4.67
	NBD-911	04/10/1996	329	No Data	~7.9	No Data	1230000	2490	21.4	<0.07	3.23
	NBA-111	07/26/1996	555	No Data	~5.4	No Data	678000	1670	14.5	0.07	1.65
	NBC-796	10/29/1996	569	No Data	5.6	No Data	955000	2010	9.8	<0.08	1.37
P92-09	NBA-109	07/25/1996	319	No Data	6.4	No Data	1720000	3490	19.8	0.04	20.1
	NBC-798	10/30/1996	392	No Data	5.6	No Data	2250000	4560	8.6	0.12	13.0

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[b] The values listed multiplied by 10^{-9} will result in microcuries per milliliter.
[c] Total dissolved solids.
[d] Nephelometric turbidity units.
[e] Estimated.

Table A-16 (continued). Groundwater Chemistry Data Collected At and Near the MMTS During 1996[a]

Sample Location	Ticket Number	Sample Date	U (μg/L)	U-234 (pCi/L)[b]	U-235 (pCi/L)[b]	U-238 (pCi/L)[b]	V (μg/L)	Zn (μg/L)
31NE93-205	NBC-603	10/31/1996	No Data	0.92	<0.06	0.07	<1.1	-10.2
31SW91-03	NBC-780	10/22/1996	No Data	524.12	23.178	531.91	1230	-8.7
31SW91-14	NBC-779	10/22/1996	No Data	1063.8	48.53	1077.7	765	22.8
31SW91-23	NBC-783	10/23/1996	No Data	320.31	14.896	321.26	<1.1	27.1
31SW91-35	NBD-913	04/11/1996	271	89.72	3.41	90.34	796	R
	NBC-777	10/23/1996	No Data	109.50	5.37	111.31	447	18.1
31SW91-50	NBF-175	04/11/1996	4330	R	R	R	265	-15.7
	NBA-550	10/18/1996	No Data	1189.2	53.94	1227.0	531	21.4
	NBC-776	10/18/1996	No Data	1175.5	50.19	1198.3	524	34.5
31SW91-55	NBF-173	04/11/1996	53.3	17.61	0.65	16.13	<6.7	-2.7
	NBA-527	10/17/1996	No Data	18.40	0.74	16.48	-1.6	-6.7
31SW93-199-1	NBC-605	10/31/1996	No Data	No Data	No Data	No Data	11.7	22.5
31SW93-203-2	NBC-619	11/26/1996	No Data	27.13	0.94	16.88	<1.1	<6.7
	NBC-621	11/26/1996	No Data	27.52	0.74	17.09	<1.1	<6.7
36SE91-58	NBF-174	04/11/1996	27.3	9.96	<0.27	8.62	<6.7	-13.6
	NBA-528	10/17/1996	No Data	9.46	0.38	8.49	<1.1	-7.5
36SE91-61	NBC-620	11/26/1996	No Data	512.88	21.90	506.32	907	<6.7
36SE93-201-2	NBD-916	04/11/1996	R	-2231.1	-108.25	-2287.4	R	R
	NBD-917	04/11/1996	7260	No Data	No Data	No Data	64700	-4.9
	NBC-778	10/21/1996	No Data	No Data	No Data	No Data	79500	22.9
82-07	NBC-800	10/31/1996	No Data	137.72	8.712	135.94	77.6	20.4
82-30B	NBD-914	04/11/1996	874	-288.78	-12.35	-289.57	2130	-3.3
	NBD-915	04/11/1996	870	-274.23	-12.26	-277.78	2100	-2.9
	NBC-785	10/24/1996	No Data	266.82	10.484	267.14	2150	<6.7
82-31B-E	NBC-784	10/23/1996	No Data	20.29	0.40	7.49	<1.1	<6.7
82-40A	NBA-526	10/17/1996	No Data	1986.4	87.40	2027.6	39.0	<6.7
82-42	NBC-786	10/24/1996	No Data	17.72	0.88	16.49	191	<6.7
83-70	NBC-781	10/22/1996	No Data	0.38	<0.05	0.06	<1.1	<6.7

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[b] The values listed multiplied by 10^{-9} will result in microcuries per milliliter.

Table A-16 (continued). Groundwater Chemistry Data Collected At and Near the MMTS During 1996[a]

Sample Location	Ticket Number	Sample Date	U (μg/L)	U-234 (pCi/L)[b]	U-235 (pCi/L)[b]	U-238 (pCi/L)[b]	V (μg/L)	Zn (μg/L)
88-85	NBC-799	10/31/1996	No Data	153.72	8.278	155.63	402	14.8
92-01	NBC-645	10/28/1996	No Data	4.84	0.15	1.94	<1.1	19.4
92-02	NBC-644	10/25/1996	No Data	0.53	<0.08	0.08	<1.1	14.3
92-03	NBC-646	10/29/1996	No Data	2.95	0.08	1.11	<1.1	19.8
92-04	NBC-789	10/25/1996	No Data	2.58	<0.06	0.24	<1.1	-8.6
92-05	NBC-649	10/30/1996	No Data	3.09	0.10	1.74	9.0	69.0
92-06	NBC-647	10/29/1996	No Data	0.24	0.05	<0.05	-1.1	17.9
92-07	NBC-614	11/01/1996	No Data	326.22	16.577	334.45	467	-8.4
92-08	NBC-606	10/31/1996	No Data	202.03	8.741	206.41	-2.4	12.8
	NBC-613	10/31/1996	No Data	210.91	10.923	211.67	-2.5	-9.2
92-09	NBD-907	04/09/1996	244	77.32	3.67	76.88	<6.7	-3.9
	NBC-787	10/24/1996	No Data	86.81	3.41	83.18	<1.1	<6.7
	NBC-788	10/24/1996	No Data	83.84	4.81	80.79	<1.1	-11.8
92-10	NBD-906	04/09/1996	<0.22	0.63	<0.06	<0.06	<6.7	-16.9
	NBC-643	10/24/1996	No Data	0.81	<0.06	<0.09	<1.1	62.7
92-11	NBD-909	04/10/1996	1560	R	R	R	930	-4.7
	NBC-782	10/22/1996	No Data	433.26	18.630	444.68	968	-8.3
92-12	NBD-920	04/12/1996	-3.4	3.96	<0.10	1.01	<6.7	R
	NBC-601	10/29/1996	No Data	4.70	0.09	1.20	-1.7	16.5
92-13	NBC-648	10/29/1996	No Data	5.78	0.10	0.59	-4.2	-11.5
93-01	NBD-918	04/12/1996	-0.52	<0.36	<0.10	<0.08	<6.7	<2.2
	NBC-602	10/30/1996	No Data	5.34	<0.07	0.25	-2.6	-10.4
95-01	NBD-856	02/13/1996	No Data	-1.0	<1.1	<1.1	<5.6	-20.4
	NBD-901	04/08/1996	-1.3	0.59	<0.05	0.30	<6.7	-4.7
	NBA-102	07/23/1996	-0.58	0.39	0.02	0.25	<7.7	27.0
	NBA-103	07/23/1996	-0.42	0.37	<0.04	0.25	<7.7	-5.2
	NBC-794	10/29/1996	No Data	0.41	<0.11	0.30	-1.1	22.6

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[b] The values listed multiplied by 10^{-9} will result in microcuries per milliliter.

Table A-16 (continued). Groundwater Chemistry Data Collected At and Near the MMTS During 1996[a]

Sample Location	Ticket Number	Sample Date	U (μg/L)	U-234 (pCi/L)[b]	U-235 (pCi/L)[b]	U-238 (pCi/L)[b]	V (μg/L)	Zn (μg/L)
95-02	NBD-855	02/12/1996	No Data	-1.1	<1.1	<1.1	<5.6	-3.6
	NBD-902	04/08/1996	-0.34	1.04	<0.26	0.33	<6.7	<2.2
	NBD-903	04/08/1996	-0.40	<0.48	<0.09	<0.10	<6.7	-13.8
	NBA-101	07/23/1996	-0.66	0.41	0.04	0.11	<7.7	-2.0
	NBC-793	10/29/1996	No Data	0.48	<0.06	<0.09	<1.1	-7.5
95-03	NBD-858	02/13/1996	No Data	-2.9	<1.1	2.4	<5.6	-3.1
	NBD-859	02/13/1996	No Data	<1.0	<1.1	2.3	<5.6	<2.2
	NBD-904	04/09/1996	6.2	3.78	0.63	2.47	<6.7	-10.6
	NBA-105	07/24/1996	5.9	2.24	0.07	2.08	<7.7	-4.6
	NBC-792	10/28/1996	No Data	2.57	0.22	2.57	<1.1	<6.7
95-04	NBD-857	02/13/1996	No Data	-16.2	<1.1	10.6	<5.6	-5.4
	NBD-905	04/09/1996	9.6	4.85	<0.16	3.10	<6.7	-10.4
	NBA-104	07/24/1996	5.6	2.62	0.11	1.96	<7.7	-4.7
	NBC-791	10/28/1996	No Data	2.79	0.10	1.91	<1.1	<6.7
95-06	NBD-861	02/13/1996	No Data	-12.3	<1.1	8.1	<5.6	R
	NBD-910	04/10/1996	38.0	19.97	0.65	13.25	<6.7	70.6
	NBA-112	07/26/1996	46.5	25.43	0.87	17.07	<7.7	36.1
	NBC-795	10/29/1996	No Data	20.62	0.79	14.18	-1.9	73.2
95-07	NBD-854	02/14/1996	No Data	-21.5	<1.1	5.0	R	R
	NBD-919	04/12/1996	R	7.97	<0.11	1.55	R	R
	NBA-110	07/25/1996	-5.0	9.01	0.25	1.90	-8.6	41.5
	NBC-650	10/29/1996	No Data	2.06	0.05	0.43	-1.7	12.3
95-08	NBD-864	02/15/1996	No Data	-3.9	<1.1	<1.1	<5.6	-7.8
	NBD-912	04/10/1996	-0.72	2.19	<0.06	<0.25	<6.7	-7.0
	NBA-107	07/24/1996	<0.22	1.55	<0.03	0.06	<7.7	-9.6
	NBC-797	10/30/1996	No Data	1.39	<0.06	0.06	<1.1	21.7

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[b] The values listed multiplied by 10^{-9} will result in microcuries per milliliter.

Table A-16 (continued). Groundwater Chemistry Data Collected At and Near the MMTS During 1996[a]

Sample Location	Ticket Number	Sample Date	U (μg/L)	U-234 (pCi/L)[b]	U-235 (pCi/L)[b]	U-238 (pCi/L)[b]	V (μg/L)	Zn (μg/L)
P92-02	NBD-863	02/14/1996	No Data	~30.7	<1.1	27.7	<5.6	~7.0
	NBA-108	07/25/1996	66.2	25.82	1.66	22.52	<7.7	~7.5
	NBC-790	10/28/1996	No Data	26.11	1.09	21.37	<1.1	~7.8
P92-04	NBD-862	02/14/1996	No Data	~12.0	<1.1	9.8	<5.6	~21.0
	NBD-911	04/10/1996	27.3	11.46	0.50	9.08	<6.7	~10.3
	NBA-111	07/26/1996	31.5	12.79	0.49	10.46	<7.7	~7.3
	NBC-796	10/29/1996	No Data	8.69	0.37	6.72	<1.1	~10.9
P92-09	NBA-109	07/25/1996	119	43.17	1.62	36.59	<7.7	~16.8
	NBC-798	10/30/1996	No Data	47.95	2.24	40.33	<1.1	22.4

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[b] The values listed multiplied by 10^{-9} will result in microcuries per milliliter.

Table A-17. QA/QC Chemistry Data Collected At and Near the MMTS During 1996[a]

Sample Location	Ticket Numbers	Sample Date	Al (µg/L)	Al[b] (µg/L)	Alpha (pCi/L)[c]	As (µg/L)	As[b] (µg/L)	Beta (pCi/L)[c]	Ca (µg/L)	Ca[b] (µg/L)
Equipment Blank	NBD-860	02/13/1996	~124	No Data	<6.62[d]	<1.1	No Data	<11.16	~83.5	No Data
	NBD-908	04/09/1996	~37.8	No Data	<4.01[d]	<0.44	No Data	<8.78	~118	No Data
	NBF-166	04/09/1996	<10.0	No Data	<3.42[d]	<0.44	No Data	<9.36	<10.0	No Data
	NBF-345	05/21/1996	<31.2	No Data	No Data	<0.56	No Data	No Data	No Data	No Data
	NBF-990	05/23/1996	<31.2	No Data	No Data	<0.56	No Data	No Data	No Data	No Data
	NBF-851	05/29/1996	<31.2	No Data	No Data	~1.5	No Data	No Data	No Data	No Data
	NBF-881	05/30/1996	<31.2	No Data	No Data	~1.9	No Data	No Data	No Data	No Data
	NBF-897	05/30/1996	<31.2	No Data	No Data	~1.4	No Data	No Data	No Data	No Data
	NBF-490	05/30/1996	~33.7	No Data	No Data	<0.56	No Data	No Data	No Data	No Data
	NBF-351	05/31/1996	<31.2	No Data	No Data	<0.56	No Data	No Data	No Data	No Data
	NBF-357	06/03/1996	<31.2	No Data	No Data	<0.56	No Data	No Data	No Data	No Data
	NBF-373	06/04/1996	<31.2	No Data	No Data	~0.61	No Data	No Data	No Data	No Data
	NBF-467	06/04/1996	<31.2	No Data	No Data	~0.64	No Data	No Data	No Data	No Data
	NBF-376	06/04/1996	<31.2	No Data	No Data	~0.58	No Data	No Data	No Data	No Data
	NBF-426	06/05/1996	~61.0	No Data	No Data	~0.64	No Data	No Data	No Data	No Data
	NBF-427	06/05/1996	~31.9	No Data	No Data	~1.5	No Data	No Data	No Data	No Data
	NBF-432	06/06/1996	~32.1	No Data	No Data	~1.7	No Data	No Data	No Data	No Data
	NBF-425	06/11/1996	<31.2	No Data	<1.78	<0.56	No Data	<4.12	93.3	No Data
	NBA-106	07/24/1996	~67.2	No Data	<1.44	<0.56	No Data	<4.20	~116	No Data
	NBC-642	10/23/1996	No Data	<6.0	<2.72	No Data	<1.0	<5.61	No Data	221
	NBC-618	11/01/1996	88.1	No Data	<2.71	<1.1	No Data	<5.62	377	No Data
	NBC-616	11/01/1996	<6.7	No Data	<3.11	<1.1	No Data	<5.66	~109	No Data

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "~" indicates an estimated value. An "R" indicates that the result was determined unusable through data validation.
[b] Sample was filtered in the field.
[c] The values listed multiplied by 10^{-9} will result in microcuries per milliliter.
[d] Estimated.

Table A-17 (continued). QA/QC Chemistry Data Collected At and Near the MMTS During 1996[a]

Sample Location	Ticket Numbers	Sample Date	Cl (µg/L)	Co (µg/L)	Co[b] (µg/L)	Cu (µg/L)	Cu[b] (µg/L)	F (µg/L)	K (µg/L)	K[b] (µg/L)
Equipment Blank	NBD-860	02/13/1996	~22.3	<5.6	No Data	<4.4	No Data	<12.0	<1280	No Data
	NBD-908	04/09/1996	~32.2	<7.8	No Data	<3.3	No Data	<2.7	<1340	No Data
	NBF-166	04/09/1996	~18.5	<7.8	No Data	<3.3	No Data	<2.7	<1340	No Data
	NBF-345	05/21/1996	No Data	<6.6	No Data	<3.7	No Data	No Data	No Data	No Data
	NBF-990	05/23/1996	No Data	<6.6	No Data	<3.7	No Data	No Data	No Data	No Data
	NBF-851	05/29/1996	No Data	<6.6	No Data	<3.7	No Data	No Data	No Data	No Data
	NBF-881	05/30/1996	No Data	<6.6	No Data	<3.7	No Data	No Data	No Data	No Data
	NBF-897	05/30/1996	No Data	<6.6	No Data	<3.7	No Data	No Data	No Data	No Data
	NBF-490	05/30/1996	No Data	<6.6	No Data	<3.7	No Data	No Data	No Data	No Data
	NBF-351	05/31/1996	No Data	<6.6	No Data	<3.7	No Data	No Data	No Data	No Data
	NBF-357	06/03/1996	No Data	<6.6	No Data	<3.7	No Data	No Data	No Data	No Data
	NBF-373	06/04/1996	No Data	<6.6	No Data	<3.7	No Data	No Data	No Data	No Data
	NBF-467	06/04/1996	No Data	<6.6	No Data	<3.7	No Data	No Data	No Data	No Data
	NBF-376	06/04/1996	No Data	<6.6	No Data	<3.7	No Data	No Data	No Data	No Data
	NBF-426	06/05/1996	No Data	<6.6	No Data	<3.7	No Data	No Data	No Data	No Data
	NBF-427	06/05/1996	No Data	<6.6	No Data	~6.1	No Data	No Data	No Data	No Data
	NBF-432	06/06/1996	No Data	<6.6	No Data	<3.7	No Data	No Data	No Data	No Data
	NBF-425	06/11/1996	<3.4	<6.6	No Data	<3.7	No Data	<2.7	<1260	No Data
	NBA-106	07/24/1996	~31.1	<6.6	No Data	<3.7	No Data	<2.7	<1260	No Data
	NBC-642	10/23/1996	~157	No Data	<6.0	No Data	<1.0	<2.7	No Data	<22.0
	NBC-618	11/01/1996	~84.7	<6.7	No Data	5.1	No Data	<2.7	~74.2	No Data
	NBC-616	11/01/1996	<3.4	<6.7	No Data	~1.9	No Data	~16.4	~47.7	No Data

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "~" indicates an estimated value. An "R" indicates that the result was determined unusable through data validation.
[b] Sample was filtered in the field.

Table A-17 (continued). QA/QC Chemistry Data Collected At and Near the MMTS During 1996[a]

Sample Location	Ticket Numbers	Sample Date	Mg (µg/L)	Mg[b] (µg/L)	Mn (µg/L)	Mn[b] (µg/L)	Mo (µg/L)	Mo[b] (µg/L)	Na (µg/L)	Na[b] (µg/L)
Equipment Blank	NBD-860	02/13/1996	<87.8	No Data	~2.0	No Data	<1.1	No Data	~226	No Data
	NBD-908	04/09/1996	<75.6	No Data	~2.3	No Data	<0.56	No Data	<48.0	No Data
	NBF-166	04/09/1996	<75.6	No Data	<1.1	No Data	<0.56	No Data	<48.0	No Data
	NBF-345	05/21/1996	No Data	No Data	~0.59	No Data	<0.33	No Data	<43.6	No Data
	NBF-990	05/23/1996	No Data	No Data	<0.56	No Data	<0.33	No Data	<43.6	No Data
	NBF-851	05/29/1996	No Data	No Data	~0.74	No Data	<0.33	No Data	<43.6	No Data
	NBF-881	05/30/1996	No Data	No Data	<0.56	No Data	<0.33	No Data	~287	No Data
	NBF-897	05/30/1996	No Data	No Data	<0.56	No Data	<0.33	No Data	~87.1	No Data
	NBF-490	05/30/1996	No Data	No Data	<0.56	No Data	<0.33	No Data	<43.6	No Data
	NBF-351	05/31/1996	No Data	No Data	~0.66	No Data	<0.33	No Data	~65.5	No Data
	NBF-357	06/03/1996	No Data	No Data	<0.56	No Data	<0.33	No Data	<43.6	No Data
	NBF-373	06/04/1996	No Data	No Data	~0.83	No Data	<0.33	No Data	<43.6	No Data
	NBF-467	06/04/1996	No Data	No Data	<0.56	No Data	<0.33	No Data	<43.6	No Data
	NBF-376	06/04/1996	No Data	No Data	~0.95	No Data	<0.33	No Data	<43.6	No Data
	NBF-426	06/05/1996	No Data	No Data	~1.3	No Data	<0.33	No Data	<43.6	No Data
	NBF-427	06/05/1996	No Data	No Data	~1.7	No Data	<0.33	No Data	~44.3	No Data
	NBF-432	06/06/1996	No Data	No Data	<0.56	No Data	<0.33	No Data	<43.6	No Data
	NBF-425	06/11/1996	<89.1	No Data	<0.56	No Data	<0.62	No Data	<43.6	No Data
	NBA-106	07/24/1996	<89.1	No Data	~2.8	No Data	~0.81	No Data	~2690	No Data
	NBC-642	10/23/1996	No Data	~24.5	No Data	~1.7	No Data	<1.0	No Data	<194
	NBC-618	11/01/1996	~32.4	No Data	5.1	No Data	<1.1	No Data	~1110	No Data
	NBC-616	11/01/1996	~13.3	No Data	<1.1	No Data	<1.1	No Data	~852	No Data

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "~" indicates an estimated value. An "R" indicates that the result was determined unusable through data validation.
[b] Sample was filtered in the field.

Table A-17 (continued). QA/QC Chemistry Data Collected At and Near the MMTS During 1996[a]

Sample Location	Ticket Numbers	Sample Date	NH_4 (µg/L)	Ni (µg/L)	NO_3+NO_2-N[b] (µg/L)	Pb (µg/L)	Pb[c] (µg/L)	Pb-210 (pCi/L)[d]	Ra-226 (pCi/L)[d]	Rn-222 (pCi/L)[d]
Equipment Blank	NBD-860	02/13/1996	~9.9	<10.0	<10.0	<1.1	No Data	1.71	<0.12	14
	NBD-908	04/09/1996	<4.0	No Data	~9.0	<0.44	No Data	<1.16	0.91	29
	NBF-166	04/09/1996	<4.0	No Data	~8.0	<0.44	No Data	<1.30	0.11	No Data
	NBF-345	05/21/1996	No Data	No Data	No Data	<0.22	No Data	<1.34	0.21	No Data
	NBF-990	05/23/1996	No Data	No Data	No Data	<0.22	No Data	<1.32	0.32	No Data
	NBF-851	05/29/1996	No Data	No Data	No Data	~0.87	No Data	<1.22	0.29	No Data
	NBF-881	05/30/1996	No Data	No Data	No Data	<0.22	No Data	<1.27	0.53	No Data
	NBF-897	05/30/1996	No Data	No Data	No Data	<0.22	No Data	<1.22	0.38	No Data
	NBF-490	05/30/1996	No Data	No Data	No Data	~0.75	No Data	<1.21	0.44	No Data
	NBF-351	05/31/1996	No Data	No Data	No Data	<0.22	No Data	<1.17	0.41	No Data
	NBF-357	06/03/1996	No Data	No Data	No Data	<0.22	No Data	<1.20	0.22	No Data
	NBF-373	06/04/1996	No Data	No Data	No Data	<0.22	No Data	<0.96	0.62	No Data
	NBF-467	06/04/1996	No Data	No Data	No Data	<0.22	No Data	<2.43	0.28	No Data
	NBF-376	06/04/1996	No Data	No Data	No Data	~0.32	No Data	<1.18	0.31	No Data
	NBF-426	06/05/1996	No Data	No Data	No Data	<0.22	No Data	<1.17	0.48	No Data
	NBF-427	06/05/1996	No Data	No Data	No Data	~1.3	No Data	<1.16	0.29	No Data
	NBF-432	06/06/1996	No Data	No Data	No Data	~0.61	No Data	<1.23	0.38	No Data
	NBF-425	06/11/1996	~8.2	No Data	<7.0	~0.62	No Data	<1.3	<0.05	No Data
	NBA-106	07/24/1996	<4.0	No Data	<7.0	~0.67	No Data	<1.18	<0.17	<29
	NBC-642	10/23/1996	~4.6	No Data	<7.0	No Data	<1.0	<1.06	0.12	No Data
	NBC-618	11/01/1996	~6.7	No Data	~43.7	<1.1	No Data	<2.26	<0.07	<15
	NBC-616	11/01/1996	~15.4	No Data	<7.0	<1.1	No Data	<1.05	<0.10	<14

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "~" indicates an estimated value. An "R" indicates that the result was determined unusable through data validation.
[b] (Nitrate + nitrite) as nitrogen.
[c] Sample was filtered in the field.
[d] The values listed multiplied by 10^{-9} will result in microcuries per milliliter.

Table A-17 (continued). QA/QC Chemistry Data Collected At and Near the MMTS During 1996[a]

Sample Location	Ticket Numbers	Sample Date	Sb (µg/L)	Se (µg/L)	Se[b] (µg/L)	Sn (µg/L)	SO_4 (µg/L)	TDS (mg/L)	Th-230 (pCi/L)[c]	U (µg/L)
Equipment Blank	NBD-860	02/13/1996	<1.1	<2.2[d]	No Data	<1.1	-71.8	-13.0	<0.80	No Data
	NBD-908	04/09/1996	No Data	<1.1[d]	No Data	No Data	269	-5.0	<0.07	<0.22
	NBF-166	04/09/1996	No Data	<1.1[d]	No Data	No Data	284	No Data	<0.10	<0.22
	NBF-345	05/21/1996	No Data	<1.7[d]	No Data	No Data	No Data	No Data	<0.08	<0.22
	NBF-990	05/23/1996	No Data	<1.7[d]	No Data	No Data	No Data	No Data	0.12	<0.22
	NBF-851	05/29/1996	No Data	<1.7[d]	No Data	No Data	No Data	No Data	<0.10	<0.22
	NBF-881	05/30/1996	No Data	<1.7[d]	No Data	No Data	No Data	No Data	<0.13	<0.22
	NBF-897	05/30/1996	No Data	<1.7[d]	No Data	No Data	No Data	No Data	<0.11	<0.22
	NBF-490	05/30/1996	No Data	<1.7[d]	No Data	No Data	No Data	No Data	<0.13	<0.22
	NBF-351	05/31/1996	No Data	<1.7[d]	No Data	No Data	No Data	No Data	<0.09	<0.22
	NBF-357	06/03/1996	No Data	<1.7[d]	No Data	No Data	No Data	No Data	<0.07	<0.22
	NBF-373	06/04/1996	No Data	<1.7[d]	No Data	No Data	No Data	No Data	<0.07	<0.22
	NBF-467	06/04/1996	No Data	<1.7[d]	No Data	No Data	No Data	No Data	<0.08	<0.22
	NBF-376	06/04/1996	No Data	<1.7[d]	No Data	No Data	No Data	No Data	<0.07	<0.22
	NBF-426	06/05/1996	No Data	<1.7[d]	No Data	No Data	No Data	No Data	<0.07	<0.22
	NBF-427	06/05/1996	No Data	<1.7[d]	No Data	No Data	No Data	No Data	<0.08	<0.22
	NBF-432	06/06/1996	No Data	<1.7[d]	No Data	No Data	No Data	No Data	<0.07	<0.22
	NBF-425	06/11/1996	No Data	<1.7	No Data	No Data	<35.0	<1.0	<0.05	<0.49
	NBA-106	07/24/1996	No Data	<1.7	No Data	No Data	126	<10.0	0.06	<0.22
	NBC-642	10/23/1996	No Data	No Data	<2.0	No Data	-198	No Data	<0.10	No Data
	NBC-618	11/01/1996	No Data	<2.2	No Data	No Data	-51.5	15.0	<0.116	No Data
	NBC-616	11/01/1996	No Data	<2.2	No Data	No Data	<35.0	25.0	<0.07	No Data

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "-" indicates an estimated value. An "R" indicates that the result was determined unusable through data validation.
[b] Sample was filtered in the field.
[c] The values listed multiplied by 10^{-9} will result in microcuries per milliliter.
[d] Estimated.

Table A-17 (continued). QA/QC Chemistry Data Collected At and Near the MMTS During 1996[a]

Sample Location	Ticket Numbers	Sample Date	U-234 (pCi/L)[b]	U-235 (pCi/L)[b]	U-238 (pCi/L)[b]	V (µg/L)	V[c] (µg/L)	Zn (µg/L)	Zn[c] (µg/L)
Equipment Blank	NBD-860	02/13/1996	<0.40	<1.1	<1.1	<5.6	No Data	~8.4	No Data
	NBD-908	04/09/1996	<0.21	<0.08	<0.11	<6.7	No Data	~17.2	No Data
	NBF-166	04/09/1996	<0.16	<0.06	<0.21	<6.7	No Data	<2.2	No Data
	NBF-345	05/21/1996	0.12	0.10	<0.07	<7.7	No Data	~2.4	No Data
	NBF-990	05/23/1996	<0.11	<0.09	<0.09	<7.7	No Data	~3.2	No Data
	NBF-851	05/29/1996	<0.11	<0.09	<0.08	<7.7	No Data	~10.0	No Data
	NBF-881	05/30/1996	<0.14	<0.08	<0.09	<7.7	No Data	~11.4	No Data
	NBF-897	05/30/1996	<0.15	<0.10	<0.09	<7.7	No Data	~4.4	No Data
	NBF-490	05/30/1996	<0.10	<0.08	<0.07	<7.7	No Data	~2.4	No Data
	NBF-351	05/31/1996	<0.10	<0.07	<0.05	<7.7	No Data	~4.1	No Data
	NBF-357	06/03/1996	<0.10	<0.07	<0.07	<7.7	No Data	~4.6	No Data
	NBF-373	06/04/1996	<0.08	<0.05	<0.07	<7.7	No Data	~15.2	No Data
	NBF-467	06/04/1996	<0.08	<0.06	<0.06	<7.7	No Data	~6.1	No Data
	NBF-376	06/04/1996	<0.07	<0.05	<0.06	<7.7	No Data	~4.4	No Data
	NBF-426	06/05/1996	<0.06	<0.06	<0.04	<7.7	No Data	~12.4	No Data
	NBF-427	06/05/1996	<0.09	<0.06	<0.07	<7.7	No Data	22.2	No Data
	NBF-432	06/06/1996	<0.10	<0.08	<0.07	<7.7	No Data	~4.9	No Data
	NBF-425	06/11/1996	<0.06	<0.03	<0.04	<7.7	No Data	~5.0	No Data
	NBA-106	07/24/1996	<0.04	<0.02	<0.02	<7.7	No Data	38.1	No Data
	NBC-642	10/23/1996	<0.10	0.06	<0.07	No Data	<1.0	No Data	<6.0
	NBC-618	11/01/1996	0.160	0.072	0.082	~1.6	No Data	~10.6	No Data
	NBC-616	11/01/1996	<0.07	<0.05	<0.06	<1.1	No Data	<6.7	No Data

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "~" indicates an estimated value. An "R" indicates that the result was determined unusable through data validation.
[b] The values listed multiplied by 10^{-9} will result in microcuries per milliliter.
[c] Sample was filtered in the field.

Table A-18. Biota Collected During 1996 for OU III Ecological Risk Assessment[a]

Sample Location	Sample Type	Ticket Number	Sample Date	Al (mg/kg)	Alpha (pCi/g)	As (mg/kg)	Beta (pCi/g)	Co (mg/kg)	Cu (mg/kg)	Gamma (pCi/g)
14FB96-01	Forbs	NBC-834	06/12/1996	~43.8	<0.33	R	4.02	<0.12	2.1	6.58
15FB96-01	Forbs	NBC-830	06/12/1996	~37.3	<0.45	R	4.71	<0.14	2.0	7.34
16FB96-01	Forbs	NBC-827	06/12/1996	~63.7	0.67	R	4.96	<0.15	2.0	7.34
21FB96-01	Forbs	NBC-836	06/12/1996	~35.5	<0.29	R	3.33	<0.08	0.96	5.75
22FB96-01	Forbs	NBC-177	06/13/1996	58.1	1.28	R	4.26	<0.09	1.5	7.28
23FB96-01	Forbs	NBC-850	06/13/1996	42.3	0.91	~0.08	4.47	<0.07	1.4	8.19
24FB96-01	Forbs	NBC-843	06/13/1996	~130	<0.67	R	5.71	<0.17	3.4	9.43
24FB96-01 (Dup)	Forbs	NBC-846	06/13/1996	~90.7	0.71	R	5.51	<0.16	3.1	9.01
25FB96-01	Forbs	NBC-840	06/13/1996	~49.9	<0.40	R	3.80	<0.10	2.2	6.46
14GS96-01	Grasses	NBC-835	06/12/1996	~17.0	<0.38	R	5.49	<0.16	~1.2	8.44
15GS96-01	Grasses	NBC-831	06/12/1996	~33.4	<0.59	R	6.72	<0.16	1.5	10.46
16GS96-01	Grasses	NBC-826	06/12/1996	~59.0	<0.54	R	5.85	<0.15	~1.1	8.26
21GS96-01	Grasses	NBC-838	06/12/1996	~108	0.91	R	7.14	<0.27	3.1	13.44
22GS96-01	Grasses	NBC-178	06/13/1996	52.2	1.49	R	6.08	<0.19	2.6	10.32
23GS96-01	Grasses	NBC-848	06/13/1996	50.4	<0.51	R	5.14	<0.16	2.1	8.63
24GS96-01	Grasses	NBC-844	06/13/1996	~96.6	1.19	R	5.21	<0.18	2.2	8.00
24GS96-01 (Dup)	Grasses	NBC-847	06/13/1996	158	1.53	R	6.08	<0.20	2.1	11.32
25GS96-01	Grasses	NBC-841	06/13/1996	~131	1.04	R	6.42	<0.19	2.0	9.26
14SH96-01	Shrubs	NBC-833	06/12/1996	~43.5	<0.45	R	4.82	<0.24	3.4	15.56
15SH96-01	Shrubs	NBC-829	06/12/1996	~53.1	0.67	R	4.45	<0.23	2.8	7.57
16SH96-01	Shrubs	NBC-828	06/12/1996	~31.4	<0.42	R	4.21	<0.22	2.1	7.95
21SH96-01	Shrubs	NBC-837	06/12/1996	~33.5	<0.39	R	3.45	<0.20	2.0	7.07
22SH96-01	Shrubs	NBC-176	06/13/1996	30.7	11.65	R	2.28	<0.21	2.2	6.68
23SH96-01	Shrubs	NBC-849	06/13/1996	31.3	<0.37	R	2.50	<0.15	1.3	5.35
24SH96-01	Shrubs	NBC-842	06/13/1996	~28.1	0.59	R	3.86	<0.22	3.2	9.55
24SH96-01 (Dup)	Shrubs	NBC-845	06/13/1996	~28.4	0.77	R	4.35	<0.22	3.1	9.97
25SH96-01	Shrubs	NBC-839	06/13/1996	~25.0	<0.37	R	3.13	<0.21	2.3	6.93
MZ-2-1	Benthic macroinvertebrates	MZ-2-1	08/14/1996	No Data	9.6	1.24	23.8	1.48	3.6	No Data
MZ-2-2	Benthic macroinvertebrates	MZ-2-2	08/14/1996	No Data	12.4	1.35	23.0	1.28	3.2	No Data
MZ-2-3	Benthic macroinvertebrates	MZ-2-3	08/14/1996	No Data	18	2.18	20.3	1.31	3	No Data

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "~" indicates an estimated value. An "R" indicates that the result was determined unusable through data validation.

Table A-18 (continued). Biota Collected During 1996 for OU III Ecological Risk Assessment[a]

Sample Location	Sample Type	Ticket Number	Sample Date	Al (mg/kg)	Alpha (pCi/g)	As (mg/kg)	Beta (pCi/g)	Co (mg/kg)	Cu (mg/kg)	Gamma (pCi/g)
MZ-3-1	Benthic macroinvertebrates	MZ-3-1	08/14/1996	No Data	13.0	1.54	20.9	.74	3	No Data
MZ-3-2	Benthic macroinvertebrates	MZ-3-2	08/14/1996	No Data	15.8	1.63	24.2	1.01	3.1	No Data
MZ-3-3	Benthic macroinvertebrates	MZ-3-3	08/14/1996	No Data	25.3	1.5	21.7	1.2	2.9	No Data
MZ-9-1	Benthic macroinvertebrates	MZ-9-1	08/14/1996	No Data	10.5	.76	18.3	.65	2.6	No Data
MZ-9-2	Benthic macroinvertebrates	MZ-9-2	08/14/1996	No Data	11.6	.74	15.3	.63	3.2	No Data
MZ-9-3	Benthic macroinvertebrates	MZ-9-3	08/14/1996	No Data	16.6	.71	24.0	.64	2.8	No Data
MZG-1	Benthic macroinvertebrates	MZG-1	08/15/1996	No Data	8.5	.85	19.9	.8	3.2	No Data
MZG-2	Benthic macroinvertebrates	MZG-2	08/15/1996	No Data	5.3	.72	11.9	.66	2.9	No Data
MZG-3	Benthic macroinvertebrates	MZG-3	08/15/1996	No Data	<4.6	.71	17.4	.64	2.9	No Data
MZUG-1	Benthic macroinvertebrates	MZUG-1	08/15/1996	No Data	<4.5	.6	22.1	.64	2.7	No Data
MZUG-2	Benthic macroinvertebrates	MZUG-2	08/15/1996	No Data	7.1	.62	13.5	.86	2.4	No Data
MZUG-3	Benthic macroinvertebrates	MZUG-3	08/15/1996	No Data	6.2	.6	<8.5	.78	2.7	No Data
VD-1-1	Benthic macroinvertebrates	VD-1-1	08/15/1996	No Data	11.0	.92	15.2	1.39	3.4	No Data
VD-1-2	Benthic macroinvertebrates	VD-1-2	08/15/1996	No Data	10.9	1.2	21.4	1.44	3.4	No Data
VD-1-3	Benthic macroinvertebrates	VD-1-3	08/15/1996	No Data	8.6	.86	17.5	1.63	3.3	No Data
14TI96-01	Non-flying invertebrates	NBC-187	07/11/1996	~340	~0.77	~0.23	~2.46	<0.37	~16.4	No Data
15TI96-01	Non-flying invertebrates	NBC-188	07/11/1996	~199	~1.15	~0.31	~2.59	<0.38	~22.1	No Data
16TI96-01	Non-flying invertebrates	NBC-189	07/11/1996	~554	~0.87	~0.60	~2.89	<0.37	~11.7	No Data
21TI96-01	Non-flying invertebrates	NBC-179	07/11/1996	~651	No Data	~18.1	No Data	<0.47	~23.5	No Data
21TI96-01 (Dup)	Non-flying invertebrates	NBC-186	07/11/1996	~332	~1.38	R	~3.26	<0.34	~17.5	No Data
22&23TI96-01	Non-flying invertebrates	NBC-180-184	07/11/1996	No Data	~3.93	No Data	~4.73	No Data	No Data	No Data
22TI96-01	Non-flying invertebrates	NBC-180	07/11/1996	~540	No Data	3.1	No Data	<1.9	~41.5	No Data
23TI96-01	Non-flying invertebrates	NBC-184	07/11/1996	~559	No Data	~0.46	No Data	<0.52	~43.7	No Data
24TI96-01	Non-flying invertebrates	NBC-181	07/11/1996	~226	~1.80	~0.83	~3.50	<0.36	~16.0	No Data
25TI96-01	Non-flying invertebrates	NBC-182	07/11/1996	~280	~1.36	R	~3.43	<0.22	~12.8	No Data
01FI96-01	Flying invertebrates	NBC-183	07/11/1996	~360	~1.40	R	~3.56	<0.40	~11.9	No Data
01FI96-01 (Dup)	Flying invertebrates	NBC-185	07/11/1996	~179	~1.11	R	~3.97	<0.38	~11.0	No Data
03FI96-01	Flying invertebrates	NBC-190	07/11/1996	~426	~0.74	R	~3.33	<0.21	~9.3	No Data

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "~" indicates an estimated value. An "R" indicates that the result was determined unusable through data validation.

Table A-18 (continued). Biota Collected During 1996 for OU III Ecological Risk Assessment[a]

Sample Location	Sample Type	Ticket Number	Sample Date	LOD[b] (%)	Mn (mg/kg)	Mo (mg/kg)	Pb (mg/kg)	Pb-210 (pCi/g)	Ra-226 (pCi/g)	Se (mg/kg)
14FB96-01	Forbs	NBC-834	06/12/1996	79.3	8.2	-1.6	-0.14	<0.2	<0.03	<0.06
15FB96-01	Forbs	NBC-830	06/12/1996	76.5	8.8	-0.82	-0.33	<0.2	<0.03	-0.09
16FB96-01	Forbs	NBC-827	06/12/1996	75.0	9.3	-0.72	-0.85	<0.2	<0.04	-0.09
21FB96-01	Forbs	NBC-836	06/12/1996	86.9	11.0	-0.21	<0.08[c]	<0.1	0.06	<0.04
22FB96-01	Forbs	NBC-177	06/13/1996	85.1	10.0	-0.28	0.11	0.2	0.21	-0.09
23FB96-01	Forbs	NBC-850	06/13/1996	87.4	9.9	-0.23	0.08	0.2	0.14	-0.17
24FB96-01	Forbs	NBC-843	06/13/1996	70.8	15.6	-0.31	-0.19	0.2	0.11	0.39
24FB96-01 (Dup)	Forbs	NBC-846	06/13/1996	72.2	14.9	-0.30	-0.14	0.2	<0.04	-0.56
25FB96-01	Forbs	NBC-840	06/13/1996	82.3	8.8	-0.58	-0.16	0.2	0.10	-0.49
14GS96-01	Grasses	NBC-835	06/12/1996	73.4	138	-0.61	<0.11[c]	<0.2	<0.03	<0.08
15GS96-01	Grasses	NBC-831	06/12/1996	73.6	15.2	-0.46	-0.27	<0.2	<0.04	-0.10
16GS96-01	Grasses	NBC-826	06/12/1996	73.8	63.3	-0.31	-3.1	0.2	<0.03	<0.08
21GS96-01	Grasses	NBC-838	06/12/1996	54.3	73.3	-0.52	-0.25	0.4	0.26	<0.14
22GS96-01	Grasses	NBC-178	06/13/1996	68.4	32.6	-0.37	0.60	0.4	0.43	-0.13
23GS96-01	Grasses	NBC-848	06/13/1996	73.0	24.6	-0.32	-0.10	0.3	0.17	-0.22
24GS96-01	Grasses	NBC-844	06/13/1996	69.0	29.8	-0.29	-0.19	<0.3	0.22	-0.76
24GS96-01 (Dup)	Grasses	NBC-847	06/13/1996	66.7	31.8	-0.31	0.21	0.4	0.28	0.40
25GS96-01	Grasses	NBC-841	06/13/1996	68.1	20.4	-0.53	-0.25	0.3	0.30	-0.51
14SH96-01	Shrubs	NBC-833	06/12/1996	60.1	32.4	-0.36	-0.29	0.3	<0.07	<0.12[c]
15SH96-01	Shrubs	NBC-829	06/12/1996	61.0	29.7	-0.27	-0.47	0.4	<0.06	<0.12
16SH96-01	Shrubs	NBC-828	06/12/1996	62.7	48.2	<0.13	-0.52	0.3	<0.08	<0.11
21SH96-01	Shrubs	NBC-837	06/12/1996	65.7	62.7	<0.12	-0.18	0.3	<0.05	<0.11[c]
22SH96-01	Shrubs	NBC-176	06/13/1996	65.1	32.5	-0.12	-0.09	<0.3	0.26	0.31
23SH96-01	Shrubs	NBC-849	06/13/1996	74.0	31.3	-0.09	-0.16	<0.2	<0.02	0.22
24SH96-01	Shrubs	NBC-842	06/13/1996	62.6	21.2	<0.14	-0.14	0.3	0.12	0.33
24SH96-01 (Dup)	Shrubs	NBC-845	06/13/1996	63.2	18.8	<0.14	-0.16	<0.3	<0.08	-0.32
25SH96-01	Shrubs	NBC-839	06/13/1996	65.0	20.5	<0.12	-0.54	0.3	<0.04	-0.25
MZ-2-1	Benthic macroinvertebrates	MZ-2-1	08/14/1996	No Data	No Data	1.81	.63	No Data	No Data	1.39
MZ-2-2	Benthic macroinvertebrates	MZ-2-2	08/14/1996	No Data	No Data	2.02	.62	No Data	No Data	1.6
MZ-2-3	Benthic macroinvertebrates	MZ-2-3	08/14/1996	No Data	No Data	1.36	1	No Data	No Data	1.72

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "-" indicates an estimated value. An "R" indicates that the result was determined unusable through data validation.
[b] Weight loss on drying, measured as a percentage.
[c] Estimated.

Table A-18 (continued). Biota Collected During 1996 for OU III Ecological Risk Assessment[a]

Sample Location	Sample Type	Ticket Number	Sample Date	LOD[b] (%)	Mn (mg/kg)	Mo (mg/kg)	Pb (mg/kg)	Pb-210 (pCi/g)	Ra-226 (pCi/g)	Se (mg/kg)
MZ-3-1	Benthic macroinvertebrates	MZ-3-1	08/14/1996	No Data	No Data	.84	.44	No Data	No Data	1.16
MZ-3-2	Benthic macroinvertebrates	MZ-3-2	08/14/1996	No Data	No Data	1.04	.47	No Data	No Data	1.48
MZ-3-3	Benthic macroinvertebrates	MZ-3-3	08/14/1996	No Data	No Data	1.32	.48	No Data	No Data	1.13
MZ-9-1	Benthic macroinvertebrates	MZ-9-1	08/14/1996	No Data	No Data	.56	.59	No Data	No Data	.99
MZ-9-2	Benthic macroinvertebrates	MZ-9-2	08/14/1996	No Data	No Data	.56	.66	No Data	No Data	1.06
MZ-9-3	Benthic macroinvertebrates	MZ-9-3	08/14/1996	No Data	No Data	.59	.51	No Data	No Data	1.05
MZG-1	Benthic macroinvertebrates	MZG-1	08/15/1996	No Data	No Data	.34	1.02	No Data	No Data	<.78
MZG-2	Benthic macroinvertebrates	MZG-2	08/15/1996	No Data	No Data	.35	.75	No Data	No Data	1.11
MZG-3	Benthic macroinvertebrates	MZG-3	08/15/1996	No Data	No Data	.36	.74	No Data	No Data	1.08
MZUG-1	Benthic macroinvertebrates	MZUG-1	08/15/1996	No Data	No Data	.28	.5	No Data	No Data	1.11
MZUG-2	Benthic macroinvertebrates	MZUG-2	08/15/1996	No Data	No Data	.26	.71	No Data	No Data	1.03
MZUG-3	Benthic macroinvertebrates	MZUG-3	08/15/1996	No Data	No Data	.27	.67	No Data	No Data	1.06
VD-1-1	Benthic macroinvertebrates	VD-1-1	08/15/1996	No Data	No Data	.58	.65	No Data	No Data	1.48
VD-1-2	Benthic macroinvertebrates	VD-1-2	08/15/1996	No Data	No Data	1.03	.6	No Data	No Data	1.78
VD-1-3	Benthic macroinvertebrates	VD-1-3	08/15/1996	No Data	No Data	1.05	.75	No Data	No Data	1.54
14TI96-01	Non-flying invertebrates	NBC-187	07/11/1996	67.52	~39.9	~0.52	~0.63	No Data	0.06	~0.76
15TI96-01	Non-flying invertebrates	NBC-188	07/11/1996	68.31	~28.4	~0.48	~0.43	No Data	0.08	0.46
16TI96-01	Non-flying invertebrates	NBC-189	07/11/1996	65.49	~44.8	~0.54	~0.68	No Data	0.12	~1.2
21TI96-01	Non-flying invertebrates	NBC-179	07/11/1996	67.35	~39.2	~0.48	~29.7	No Data	No Data	1.0
21TI96-01 (Dup)	Non-flying invertebrates	NBC-186	07/11/1996	69.73	~32.2	~0.55	~0.72	No Data	0.29	0.85
22&23TI96-01	Non-flying invertebrates	NBC-180-184	07/11/1996	No Data	No Data	No Data	No Data	No Data	0.90	No Data
22TI96-01	Non-flying invertebrates	NBC-180	07/11/1996	68.13	~68.6	<1.9	1.4	No Data	No Data	~2.8
23TI96-01	Non-flying invertebrates	NBC-184	07/11/1996	63.72	~60.4	~0.44	~1.3	No Data	No Data	1.1
24TI96-01	Non-flying invertebrates	NBC-181	07/11/1996	67.26	~41.5	~0.35	~1.3	No Data	0.38	~0.97
25TI96-01	Non-flying invertebrates	NBC-182	07/11/1996	68.43	~43.2	~0.46	~1.0	No Data	0.43	0.81
01FI96-01	Flying invertebrates	NBC-183	07/11/1996	65.69	~36.5	~0.27	~1.4	No Data	0.22	~0.82
01FI96-01 (Dup)	Flying invertebrates	NBC-185	07/11/1996	64.72	~34.4	~0.35	~1.5	No Data	0.23	1.1
03FI96-01	Flying invertebrates	NBC-190	07/11/1996	65.91	~31.5	~0.30	~1.5	No Data	0.11	~1.5

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit).
A "~" indicates an estimated value. An "R" indicates that the result was determined unusable through data validation.
[b] Weight loss on drying, measured as a percentage.

Table A-18 (continued). Biota Collected During 1996 for OU III Ecological Risk Assessment[a]

Sample Location	Sample Type	Ticket Number	Sample Date	Th-230 (pCi/g)	U (mg/kg)	U-234 (pCi/g)	U-235 (pCi/g)	U-238 (pCi/g)	V (mg/kg)	Zn (mg/kg)
14FB96-01	Forbs	NBC-834	06/12/1996	<0.02	0.11	<0.02	<0.02	<0.01	<0.14	~6.9
15FB96-01	Forbs	NBC-830	06/12/1996	<0.02	0.33	0.12	<0.02	0.12	<0.16	~8.0
16FB96-01	Forbs	NBC-827	06/12/1996	<0.02	0.18	0.08	<0.02	<0.02	<0.17	~7.3
21FB96-01	Forbs	NBC-836	06/12/1996	<0.01	0.17	0.05	<0.01	<0.01	<0.09	~3.5
22FB96-01	Forbs	NBC-177	06/13/1996	0.06	0.42	0.13	<0.01	0.16	~0.38	4.9
23FB96-01	Forbs	NBC-850	06/13/1996	0.03	0.15	0.05	<0.01	0.05	~0.17	3.9
24FB96-01	Forbs	NBC-843	06/13/1996	<0.02	~0.13	<0.03	<0.03	<0.02	~0.42	~10.2
24FB96-01 (Dup)	Forbs	NBC-846	06/13/1996	<0.02	~0.12	<0.03	<0.03	<0.02	~0.22	~10.0
25FB96-01	Forbs	NBC-840	06/13/1996	<0.01	0.17	<0.02	<0.01	0.07	~0.13	~7.3
14GS96-01	Grasses	NBC-835	06/12/1996	<0.02	~0.08	<0.03	<0.02	<0.03	<0.18	~5.2
15GS96-01	Grasses	NBC-831	06/12/1996	<0.02	~0.10	<0.03	<0.03	<0.02	<0.18	~8.8
16GS96-01	Grasses	NBC-826	06/12/1996	<0.03	~0.07	<0.03	<0.03	<0.02	<0.18	~7.6
21GS96-01	Grasses	NBC-838	06/12/1996	<0.04	0.39	<0.03	<0.03	<0.04	<0.32	~12.7
22GS96-01	Grasses	NBC-178	06/13/1996	<0.02	0.44	0.20	<0.02	0.16	<0.22	10.5
23GS96-01	Grasses	NBC-848	06/13/1996	<0.01	0.15	<0.02	<0.02	<0.02	<0.19	7.9
24GS96-01	Grasses	NBC-844	06/13/1996	0.06	0.32	<0.04	<0.02	<0.02	~0.46	~8.4
24GS96-01 (Dup)	Grasses	NBC-847	06/13/1996	0.06	0.34	0.17	<0.03	0.18	~0.81	8.7
25GS96-01	Grasses	NBC-841	06/13/1996	<0.03	0.17	<0.03	<0.03	<0.02	<0.22	~6.8
14SH96-01	Shrubs	NBC-833	06/12/1996	<0.02	~0.10	<0.04	<0.04	<0.02	<0.28	~39.5
15SH96-01	Shrubs	NBC-829	06/12/1996	<0.04	0.34	<0.05	<0.05	0.15	<0.27	~27.8
16SH96-01	Shrubs	NBC-828	06/12/1996	<0.03	~0.14	<0.03	<0.03	<0.03	<0.26	~29.8
21SH96-01	Shrubs	NBC-837	06/12/1996	<0.02	0.20	<0.04	<0.03	<0.04	<0.24	~40.7
22SH96-01	Shrubs	NBC-176	06/13/1996	<0.02	0.25	<0.04	<0.03	<0.04	<0.24	61.7
23SH96-01	Shrubs	NBC-849	06/13/1996	<0.01	<0.09	<0.02	<0.02	<0.02	<0.18	32.8
24SH96-01	Shrubs	NBC-842	06/13/1996	<0.02	~0.11	<0.04	<0.03	<0.03	<0.26	~36.5
24SH96-01 (Dup)	Shrubs	NBC-845	06/13/1996	<0.03	~0.14	<0.05	<0.03	<0.03	<0.25	~34.9
25SH96-01	Shrubs	NBC-839	06/13/1996	<0.02	0.18	<0.03	<0.02	<0.03	<0.24	~29.4
MZ-2-1	Benthic macroinvertebrates	MZ-2-1	08/14/1996	No Data	.96	No Data	No Data	No Data	7.8	18
MZ-2-2	Benthic macroinvertebrates	MZ-2-2	08/14/1996	No Data	.79	No Data	No Data	No Data	8.7	17
MZ-2-3	Benthic macroinvertebrates	MZ-2-3	08/14/1996	No Data	.87	No Data	No Data	No Data	11.9	16

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "~" indicates an estimated value. An "R" indicates that the result was determined unusable through data validation.

Table A-18 (continued). Biota Collected During 1996 for OU III Ecological Risk Assessment[a]

Sample Location	Sample Type	Ticket Number	Sample Date	Th-230 (pCi/g)	U (mg/kg)	U-234 (pCi/g)	U-235 (pCi/g)	U-238 (pCi/g)	V (mg/kg)	Zn (mg/kg)
MZ-3-1	Benthic macroinvertebrates	MZ-3-1	08/14/1996	No Data	1.05	No Data	No Data	No Data	6.2	16
MZ-3-2	Benthic macroinvertebrates	MZ-3-2	08/14/1996	No Data	1.78	No Data	No Data	No Data	6.2	16
MZ-3-3	Benthic macroinvertebrates	MZ-3-3	08/14/1996	No Data	1.08	No Data	No Data	No Data	6.3	15
MZ-9-1	Benthic macroinvertebrates	MZ-9-1	08/14/1996	No Data	.96	No Data	No Data	No Data	2.7	14
MZ-9-2	Benthic macroinvertebrates	MZ-9-2	08/14/1996	No Data	.74	No Data	No Data	No Data	2.9	16
MZ-9-3	Benthic macroinvertebrates	MZ-9-3	08/14/1996	No Data	.92	No Data	No Data	No Data	2.9	15
MZG-1	Benthic macroinvertebrates	MZG-1	08/15/1996	No Data	.1	No Data	No Data	No Data	3.9	27
MZG-2	Benthic macroinvertebrates	MZG-2	08/15/1996	No Data	.12	No Data	No Data	No Data	2.6	24
MZG-3	Aquatic macroinvertebrates	MZG-3	08/15/1996	No Data	.07	No Data	No Data	No Data	2.1	24
MZUG-1	Benthic macroinvertebrates	MZUG-1	08/15/1996	No Data	.09	No Data	No Data	No Data	1.7	17
MZUG-2	Benthic macroinvertebrates	MZUG-2	08/15/1996	No Data	.1	No Data	No Data	No Data	2.6	16
MZUG-3	Benthic macroinvertebrates	MZUG-3	08/15/1996	No Data	.09	No Data	No Data	No Data	2.8	16
VD-1-1	Benthic macroinvertebrates	VD-1-1	08/15/1996	No Data	.13	No Data	No Data	No Data	3.4	22
VD-1-2	Benthic macroinvertebrates	VD-1-2	08/15/1996	No Data	.11	No Data	No Data	No Data	3.4	21
VD-1-3	Benthic macroinvertebrates	VD-1-3	08/15/1996	No Data	.12	No Data	No Data	No Data	3.5	21
14TI96-01	Non-flying invertebrates	NBC-187	07/11/1996	No Data	~0.44	No Data	No Data	No Data	~0.81	~61.5
15TI96-01	Non-flying invertebrates	NBC-188	07/11/1996	No Data	~0.62	No Data	No Data	No Data	~0.54	~50.3
16TI96-01	Non-flying invertebrates	NBC-189	07/11/1996	No Data	~0.54	No Data	No Data	No Data	~1.1	~57.5
21TI96-01	Non-flying invertebrates	NBC-179	07/11/1996	No Data	~4.9	No Data	No Data	No Data	5.0	~62.2
21TI96-01 (Dup)	Non-flying invertebrates	NBC-186	07/11/1996	No Data	~1.0	No Data	No Data	No Data	~1.5	~54.2
22&23TI96-01	Non-flying invertebrates	NBC-180-184	07/11/1996	No Data	No Data	No Data	No Data	No Data	No Data	No Data
22TI96-01	Non-flying invertebrates	NBC-180	07/11/1996	No Data	~4.9	No Data	No Data	No Data	~3.9	~91.4
23TI96-01	Non-flying invertebrates	NBC-184	07/11/1996	No Data	~2.8	No Data	No Data	No Data	2.1	~73.5
24TI96-01	Non-flying invertebrates	NBC-181	07/11/1996	No Data	~1.3	No Data	No Data	No Data	~1.2	~64.1
25TI96-01	Non-flying invertebrates	NBC-182	07/11/1996	No Data	~0.53	No Data	No Data	No Data	~0.96	~56.5
01FI96-01	Flying invertebrates	NBC-183	07/11/1996	No Data	~1.5	No Data	No Data	No Data	~1.6	~62.0
01FI96-01 (Dup)	Flying invertebrates	NBC-185	07/11/1996	No Data	~2.7	No Data	No Data	No Data	~1.4	~59.0
03FI96-01	Flying invertebrates	NBC-190	07/11/1996	No Data	~0.57	No Data	No Data	No Data	~1.2	~47.2

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "~" indicates an estimated value. An "R" indicates that the result was determined unusable through data validation.

Table A-19. Soil and Sediment Data Collected At During 1996[a] for OU III Ecological Risk Assessment[a]

Sample Location	Sample Type	Ticket Number	Sample Date	Al (mg/kg)	As (mg/kg)	Co (mg/kg)	Cu (mg/kg)	K-40 (pCi/g)	LOD[b] (%)	Mn (mg/kg)	Mo (mg/kg)
14SD96-01 0-3"	Sediment	NBF-330	05/20/1996	14400	~5.5	5.6	11.3	26.82	No Data	329	~0.68
14SD96-02 0-3"	Sediment	NBF-331	05/20/1996	9670	~5.4	7.0	13.1	25.28	No Data	431	~0.99
14SD96-03 0-3"	Sediment	NBF-332	05/20/1996	13100	-<5.1	5.5	10.6	25.56	No Data	359	~0.55
14SD96-04 0-3"	Sediment	NBF-333	05/20/1996	12900	~5.3	5.9	11.3	26.87	No Data	322	~0.77
14SD96-05 0-3"	Sediment	NBF-334	05/20/1996	8600	~5.3	5.9	11.3	25.91	No Data	352	~0.78
14SD96-06 36-42"	Sediment	NBF-429	06/05/1996	11300	5.6	6.6	47.3	18.49	No Data	436	~0.64
14SS96-N 0-3"	Soil	NBF-326	05/20/1996	12100	4.8	~4.9	8.4	14.28	7.54	396	~0.91
14SS96-N 3-24"	Soil	NBF-327	05/20/1996	12000	4.6	~4.2	7.3	16.75	11.0	452	~0.83
14SS96-S 0-3"	Soil	NBF-328	05/20/1996	15800	4.0	5.1	7.6	20.57	10.4	1060	~0.73
14SS96-S 3-24"	Soil	NBF-329	05/20/1996	15400	4.2	5.1	8.0	21.88	15.0	1100	~0.67
15SD96-01 0-3"	Sediment	NBF-338	05/20/1996	19100	~9.0	9.9	15.3	26.01	No Data	4390	~1.4
15SS96-N 0-3"	Soil	NBF-335	05/20/1996	10800	4.3	5.3	9.1	20.96	5.45	371	~0.70
15SS96-N 3-24"	Soil	NBF-336	05/20/1996	15000	6.5	5.3	7.9	21.02	7.50	397	~0.88
15SS96-S 0-3"	Soil	NBF-337	05/20/1996	16700	4.2	6.5	11.0	22.36	7.27	462	~0.49
15SS96-S 3-24"	Soil	NBF-339	05/20/1996	18600	4.8	5.8	9.6	23.41	7.72	414	~0.51
16SD96-01 0-3"	Sediment	NBF-342	05/21/1996	19300	~10.0	9.8	15.9	26.17	No Data	2650	~1.2
16SS96-N 0-3"	Soil	NBF-340	05/21/1996	14900	4.8	~4.5	7.7	19.28	12.8	283	~0.65
16SS96-N 3-24"	Soil	NBF-341	05/21/1996	9230	4.4	~4.6	7.7	16.96	14.6	277	~0.74
16SS96-S 0-3"	Soil	NBF-343	05/21/1996	10200	4.6	~4.4	7.7	16.27	4.42	396	~0.58
16SS96-S 3-24"	Soil	NBF-344	05/21/1996	17100	4.7	5.6	9.6	20.81	7.22	435	~0.64
17SD96-01 0-3"	Sediment	NBF-951	05/21/1996	14500	~7.1	~4.5	10.3	24.00	No Data	562	~0.46
17SS96-N 0-3"	Soil	NBF-349	05/21/1996	12300	4.2	~2.0	5.1	15.77	16.6	395	<0.31
17SS96-N 3-24"	Soil	NBF-350	05/21/1996	7820	4.2	~3.0	6.7	16.82	19.1	433	<0.35
17SS96-S 0-3"	Soil	NBF-346	05/21/1996	7280	3.3	~2.4	4.9	18.76	10.2	344	<0.25
17SS96-S 0-3" (Dup)	Soil	NBF-348	05/21/1996	11200	5.5	~2.9	5.9	18.01	18.1	446	<0.32
17SS96-S 3-24"	Soil	NBF-347	05/21/1996	8230	3.8	~3.0	5.6	19.37	17.7	394	<0.28
18SD96-01 0-3"	Sediment	NBF-999	05/23/1996	12400	~4.7	~4.3	9.2	28.93	No Data	408	~0.20
18SD96-02 0-3"	Sediment	NBF-928	05/23/1996	~14600	4.5	~4.3	9.9	28.46	No Data	342	~0.22
18SD96-03 0-3"	Sediment	NBF-927	05/23/1996	~7710	<3.0	~3.3	7.4	29.98	No Data	351	~0.16
18SD96-04 0-3"	Sediment	NBF-929	05/23/1996	~17700	4.0	~4.5	11.3	31.90	No Data	444	~0.29

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "~" indicates an estimated value.
[b] Weight loss on drying, measured as a percentage.

Table A-19 (continued). Ecological Risk Assessment Soil and Sediment Samples Chemistry Data Collected At and Near MMTS During 1996[a]

Sample Location	Sample Type	Ticket Number	Sample Date	Al (mg/kg)	As (mg/kg)	Co (mg/kg)	Cu (mg/kg)	K-40 (pCi/g)	LOD[b] (%)	Mn (mg/kg)	Mo (mg/kg)
18SD96-05 0-3"	Sediment	NBF-926	05/23/1996	15400	~5.3	5.7	12.9	33.94	No Data	486	~0.34
18SD96-06 0-3"	Sediment	NBF-932	05/23/1996	~11200	4.4	~4.4	11.3	31.40	No Data	430	~0.27
18SD96-07 24-30"	Sediment	NBF-428	06/05/1996	9310	5.2	~4.2	43.5	24.01	No Data	272	~0.38
18SS96-E 0-3"	Soil	NBF-930	05/23/1996	~9010	2.6	~2.8	10.8	17.21	2.38	291	~0.15
18SS96-E 3-24"	Soil	NBF-931	05/23/1996	~9600	2.7	~2.7	9.1	18.61	4.16	316	~0.14
18SS96-W 0-3"	Soil	NBF-997	05/23/1996	~10600	2.8	~3.5	10.0	17.64	7.34	284	~0.22
18SS96-W 3-24"	Soil	NBF-998	05/23/1996	~11500	3.4	~3.5	16.9	18.90	8.47	308	~0.24
19SD96-01 0-3"	Sediment	NBF-954	05/21/1996	15700	~6.4	~4.8	12.0	31.23	No Data	372	~0.65
19SS96-E 0-3"	Soil	NBF-955	05/21/1996	15400	3.8	~3.2	5.7	17.91	8.31	332	<0.25
19SS96-E 3-24"	Soil	NBF-956	05/21/1996	~8890	~4.1	~2.3	~5.6	16.55	5.32	~295	~0.28
19SS96-W 0-3"	Soil	NBF-952	05/21/1996	7070	3.5	~2.4	8.0	16.82	6.25	326	<0.32
19SS96-W 3-24"	Soil	NBF-953	05/21/1996	15000	4.6	~3.6	6.5	16.26	14.4	325	~0.72
20SD96-01 0-3"	Sediment	NBF-995	05/23/1996	14300	~6.3	~4.9	11.0	29.20	No Data	269	~0.16
20SS96-E 0-3"	Soil	NBF-993	05/23/1996	~13200	5.0	~3.6	19.9	21.09	11.8	311	~0.24
20SS96-E 3-24"	Soil	NBF-994	05/23/1996	~13000	5.5	~4.0	33.0	20.48	13.8	306	~0.39
20SS96-W 0-3"	Soil	NBF-991	05/23/1996	~8400	4.3	~3.3	8.7	19.77	26.3	350	~0.19
20SS96-W 0-3" (Dup)	Soil	NBF-996	05/23/1996	~9860	4.4	~3.5	8.6	18.80	26.3	364	~0.18
20SS96-W 3-24"	Soil	NBF-992	05/23/1996	~10700	4.2	~3.3	8.8	18.17	26.9	317	~0.26
21SD96-01 0-3"	Sediment	NBF-959	05/22/1996	15900	~6.4	5.8	34.5	25.91	No Data	621	~1.0
21SD96-01 0-3" (Dup)	Sediment	NBF-960	05/22/1996	16100	~6.3	5.8	28.0	26.65	No Data	554	~1.1
21SD96-02 0-3"	Sediment	NBF-961	05/22/1996	12300	~6.2	6.0	38.0	28.56	No Data	928	~1.8
21SS96-N 0-3"	Soil	NBF-957	05/22/1996	~12700	~4.7	6.2	~11.5	21.10	10.69	~454	~0.42
21SS96-N 3-24"	Soil	NBF-958	05/22/1996	~10600	~5.9	5.4	~17.6	21.40	15.7	~407	~0.58
21SS96-S 0-3"	Soil	NBF-962	05/22/1996	~9770	~5.6	5.7	~21.7	18.78	23.5	~660	~0.87
21SS96-S 3-24"	Soil	NBF-963	05/22/1996	~9580	~5.6	6.0	~65.1	20.18	21.7	~340	~0.99
22SD96-01 0-3"	Sediment	NBF-964	05/22/1996	21200	~9.0	6.3	56.5	25.75	No Data	518	~1.1
22SD96-02 0-3"	Sediment	NBF-967	05/22/1996	12800	~6.2	5.6	29.2	<3.30	No Data	442	~3.0
22SD96-03 0-3"	Sediment	NBF-970	05/22/1996	12300	~5.7	6.2	31.6	24.80	No Data	450	~3.2
22SD96-04 0-3"	Sediment	NBF-969	05/22/1996	19900	~6.5	5.9	31.8	23.00	No Data	507	~1.2
22SD96-05 0-3"	Sediment	NBF-968	05/22/1996	22400	~6.5	6.8	27.7	29.07	No Data	512	~1.1
22SD96-06 0-3"	Sediment	NBF-909	05/24/1996	~22000	8.9	7.4	51.4	24.02	No Data	501	~2.7

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "~" indicates an estimated value.
[b] Weight loss on drying, measured as a percentage.

Table A-19 (continued). Ecological Risk Assessment Soil and Sediment Samples Chemistry Data Collected At and Near MMTS During 1996[a]

Sample Location	Sample Type	Ticket Number	Sample Date	Al (mg/kg)	As (mg/kg)	Co (mg/kg)	Cu (mg/kg)	K40 (pCi/g)	LOD (%)	Mn (mg/kg)	Mo (mg/kg)
22SD96-07 9-15"	Sediment	NBF-430	06/06/1996	19900	11.2	7.6	89.7	19.95	No Data	585	~2.9
22SD96-07 9-15" (Dup)	Sediment	NBF-431	06/06/1996	14300	10.8	7.2	84.4	22.33	No Data	593	~3.1
22SS96-N 0-3"	Soil	NBF-965	05/22/1996	~18900	~7.6	6.3	~64.5	19.94	19.7	~399	~1.0
22SS96-N 3-24"	Soil	NBF-966	05/22/1996	~12000	~10.5	8.3	~112	22.79	20.8	~285	~1.9
22SS96-N2 0-3"	Soil	NBF-971	05/22/1996	~15000	~8.9	6.9	~107	22.14	22.5	~346	~1.3
22SS96-N2 3-24"	Soil	NBF-972	05/22/1996	~14200	~13.9	9.4	~135	27.10	20.6	~342	~2.2
23SD96-01 0-3"	Sediment	NBF-901	05/24/1996	~9600	12.2	6.9	76.5	33.19	No Data	599	~1.8
23SD96-02 0-3"	Sediment	NBF-902	05/24/1996	~22600	11.9	7.0	40.6	25.90	No Data	826	~2.5
23SD96-03 0-3"	Sediment	NBF-903	05/24/1996	~20400	10.4	8.1	34.8	25.89	No Data	1200	~1.2
23SD96-04 0-3"	Sediment	NBF-904	05/24/1996	~17100	5.5	5.7	21.5	26.69	No Data	292	~0.62
23SD96-05 0-3"	Sediment	NBF-905	05/24/1996	~17700	6.5	6.4	23.7	28.90	No Data	810	~0.69
23SD96-06 0-3"	Sediment	NBF-906	05/24/1996	~13700	9.9	7.1	47.5	30.68	No Data	665	~1.4
23SD96-07 18-24"	Sediment	NBF-433	06/06/1996	15700	9.7	6.5	56.9	20.86	No Data	368	~2.6
23SD96-07 18-24" (Dup)	Sediment	NBF-434	06/06/1996	17400	9.7	6.4	54.0	20.94	No Data	378	~2.2
23SS96-N 0-3"	Soil	NBF-949	05/24/1996	~11000	6.5	5.9	55.0	17.54	25.6	402	~1.2
23SS96-N 3-24"	Soil	NBF-950	05/24/1996	~15100	7.2	6.8	41.1	17.83	24.6	287	~1.4
23SS96-S 0-3"	Soil	NBF-907	05/24/1996	~10000	4.8	5.5	26.5	20.62	19.5	375	~0.73
23SS96-S 3-24"	Soil	NBF-908	05/24/1996	~10200	4.4	5.1	15.7	20.42	19.9	308	~0.78
24SD96-01 0-3"	Sediment	NBF-914	05/28/1996	19000	7.4	6.8	27.7	17.77	No Data	1220	~3.5
24SD96-02 0-3"	Sediment	NBF-915	05/28/1996	10800	6.8	6.2	32.6	19.12	No Data	697	~2.8
24SS96-N 0-3"	Soil	NBF-910	05/28/1996	16800	4.4	5.2	12.1	18.94	4.7	329	~0.50
24SS96-N 3-24"	Soil	NBF-911	05/28/1996	10600	5.1	6.2	11.8	21.15	3.5	336	~0.56
24SS96-S 0-3"	Soil	NBF-912	05/28/1996	11600	11.0	8.3	132	21.96	12.1	805	~2.0
24SS96-S 3-24"	Soil	NBF-913	05/28/1996	11500	11.4	8.3	205	19.56	11.5	414	~2.6
25SD96-01 0-3"	Sediment	NBF-868	05/29/1996	8210	3.0	~3.6	9.4	18.57	No Data	346	<0.47
25SD96-02 0-3"	Sediment	NBF-867	05/29/1996	11800	3.2	~3.6	9.5	20.29	No Data	347	<0.55
25SS96-N 0-3"	Soil	NBF-869	05/29/1996	15400	8.0	7.1	131	19.83	8.0	380	~1.1
25SS96-N 3-24"	Soil	NBF-870	05/29/1996	16000	6.1	6.1	38.3	18.35	15.0	303	~1.2
25SS96-N 3-24" (Dup)	Soil	NBF-871	05/29/1996	15900	6.0	6.1	45.2	20.04	13.9	320	~1.3
25SS96-S 0-3"	Soil	NBF-865	05/29/1996	9650	7.9	7.6	164	14.60	6.6	403	~0.86
25SS96-S 3-24"	Soil	NBF-866	05/29/1996	12600	7.7	7.2	94.0	18.14	13.4	388	~1.7

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "~" indicates an estimated value.
[b] Weight loss on drying, measured as a percentage.

Table A-19 (continued). Ecological Risk Assessment Soil and Sediment Samples Chemistry Data Collected At and Near MMTS During 1996[a]

Sample Location	Sample Type	Ticket Number	Sample Date	Na (mg/kg)	NO_3+NO_2-N[b] (mg/kg)	Pb (mg/kg)	Pb-210 (pCi/g)	pH	Ra-226 (pCi/g)	Se (mg/kg)	SO_4 (mg/kg)
14SD96-01 0-3"	Sediment	NBF-330	05/20/1996	~170	0.72	11.6	2.90	7.3	1.40	1.7	167
14SD96-02 0-3"	Sediment	NBF-331	05/20/1996	~233	1.2	13.2	3.09	7.3	1.29	2.1	191
14SD96-03 0-3"	Sediment	NBF-332	05/20/1996	~149	0.83	11.7	2.90	7.2	1.68	1.8	103
14SD96-04 0-3"	Sediment	NBF-333	05/20/1996	~171	0.82	12.7	2.73	7.2	1.27	2.3	132
14SD96-05 0-3"	Sediment	NBF-334	05/20/1996	~148	0.38	12.9	2.39	7.7	1.31	2.2	93.7
14SD96-06 36-42"	Sediment	NBF-429	06/05/1996	~141	~0.08	12.2	1.88	7.1	1.69	1.5	681
14SS96-N 0-3"	Soil	NBF-326	05/20/1996	~240	6.1	10.2	<1.68	7.8	1.06	1.1	68.0
14SS96-N 3-24"	Soil	NBF-327	05/20/1996	~173	3.2	8.6	<1.70	7.8	1.00	1.3	64.8
14SS96-S 0-3"	Soil	NBF-328	05/20/1996	~214	2.4	9.4	<1.62	7.9	1.23	0.99	80.4
14SS96-S 3-24"	Soil	NBF-329	05/20/1996	~209	1.6	9.3	<1.67	7.3	1.73	1.5	66.0
15SD96-01 0-3"	Sediment	NBF-338	05/20/1996	~307	0.94	29.1	3.07	7.8	2.48	5.3	354
15SS96-N 0-3"	Soil	NBF-335	05/20/1996	~137	1.9	9.3	<1.60	7.7	1.42	1.4	121
15SS96-N 3-24"	Soil	NBF-336	05/20/1996	~197	1.6	9.8	<1.61	7.9	2.00	1.8	99.2
15SS96-S 0-3"	Soil	NBF-337	05/20/1996	~94.9	1.4	9.9	<1.60	7.3	1.31	1.3	4.5
15SS96-S 3-24"	Soil	NBF-339	05/20/1996	~113	1.9	9.7	<1.69	7.8	1.33	1.8	4.8
16SD96-01 0-3"	Sediment	NBF-342	05/21/1996	~297	0.79	20.0	1.91	7.8	1.91	5.2	181
16SS96-N 0-3"	Soil	NBF-340	05/21/1996	~203	2.1	8.6	<1.61	7.9	1.06	1.3	123
16SS96-N 3-24"	Soil	NBF-341	05/21/1996	~169	1.3	8.7	<1.65	7.0	1.25	1.3	153
16SS96-S 0-3"	Soil	NBF-343	05/21/1996	~91.7	2.0	8.5	<1.67	7.8	1.13	0.98	6.5
16SS96-S 3-24"	Soil	NBF-344	05/21/1996	~114	2.2	9.6	<1.56	8.1	1.02	1.5	6.3
17SD96-01 0-3"	Sediment	NBF-951	05/21/1996	~358	0.83	14.1	2.45	7.7	1.55	3.5	128
17SS96-N 0-3"	Soil	NBF-349	05/21/1996	~261	2.7	6.9	<1.57	8.0	0.90	1.4	167
17SS96-N 3-24"	Soil	NBF-350	05/21/1996	~227	1.3	8.1	<1.54	7.6	1.37	1.5	231
17SS96-S 0-3"	Soil	NBF-346	05/21/1996	~256	1.8	6.2	<1.55	8.2	0.61	0.99	94.6
17SS96-S 0-3" (Dup)	Soil	NBF-348	05/21/1996	~235	1.5	7.9	<1.74	8.0	<0.467	1.2	82.7
17SS96-S 3-24"	Soil	NBF-347	05/21/1996	~231	1.2	7.2	<1.57	7.6	1.34	1.0	104
18SD96-01 0-3"	Sediment	NBF-999	05/23/1996	~312	0.73	10.4	2.26	7.5	1.12	<1.8	591
18SD96-02 0-3"	Sediment	NBF-928	05/23/1996	~276	0.87	11.5	2.69	8.0	1.75	2.3	544
18SD96-03 0-3"	Sediment	NBF-927	05/23/1996	~270	0.65	8.4	2.63	7.5	1.44	1.4	538
18SD96-04 0-3"	Sediment	NBF-929	05/23/1996	~315	0.75	22.4	2.43	7.6	1.62	2.5	607

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "~" indicates an estimated value.
[b] (Nitrate + nitrite) as nitrogen.

Table A-19 (continued). Ecological Risk Assessment Soil and Sediment Samples Chemistry Data Collected At and Near MMTS During 1996[a]

Sample Location	Sample Type	Ticket Number	Sample Date	Na (mg/kg)	NO_3+NO_2-N[b] (mg/kg)	Pb (mg/kg)	Pb-210 (pCi/g)	pH	Ra-226 (pCi/g)	Se (mg/kg)	SO_4 (mg/kg)
18SD96-05 0-3"	Sediment	NBF-926	05/23/1996	~328	1.1	16.9	3.75	7.8	1.26	<1.3	910
18SD96-06 0-3"	Sediment	NBF-932	05/23/1996	~327	No Data	12.5	3.35	No Data	1.94	1.9	No Data
18SD96-07 24-30"	Sediment	NBF-428	06/05/1996	~248	~0.21	13.7	<1.38	7.9	1.92	1.1	168
18SS96-E 0-3"	Soil	NBF-930	05/23/1996	~78.3	2.9	~6.9	<1.38	8.1	1.60	1.7	14.6
18SS96-E 3-24"	Soil	NBF-931	05/23/1996	~91.5	2.0	~6.9	<1.35	8.3	1.84	1.1	22.4
18SS96-W 0-3"	Soil	NBF-997	05/23/1996	~149	35.0	~7.1	<1.39	7.7	1.94	1.2	137
18SS96-W 3-24"	Soil	NBF-998	05/23/1996	~128	3.6	~7.1	<1.36	8.3	2.06	1.2	56.1
19SD96-01 0-3"	Sediment	NBF-954	05/21/1996	~319	0.94	14.1	3.03	7.9	2.01	2.4	113
19SS96-E 0-3"	Soil	NBF-955	05/21/1996	~295	1.9	6.7	1.61	7.7	1.21	1.2	644
19SS96-E 3-24"	Soil	NBF-956	05/21/1996	~217	1.7	~6.4	1.83	8.0	1.38	~1.7	179
19SS96-W 0-3"	Soil	NBF-952	05/21/1996	~125	1.9	7.0	<1.49	7.8	0.80	0.68	49.5
19SS96-W 3-24"	Soil	NBF-953	05/21/1996	~210	2.0	8.2	<1.47	7.9	1.11	1.4	31.2
20SD96-01 0-3"	Sediment	NBF-995	05/23/1996	~345	0.48	20.9	3.27	7.6	1.26	2.4	531
20SS96-E 0-3"	Soil	NBF-993	05/23/1996	~214	3.7	~9.2	2.14	7.8	3.65	1.4	249
20SS96-E 3-24"	Soil	NBF-994	05/23/1996	~282	2.0	~9.5	4.32	7.9	6.56	2.1	625
20SS96-W 0-3"	Soil	NBF-991	05/23/1996	~988	2.2	~9.7	<1.39	7.7	0.98	2.0	813
20SS96-W 0-3" (Dup)	Soil	NBF-996	05/23/1996	~1040	1.5	~10.3	<1.42	7.8	1.19	2.0	430
20SS96-W 3-24"	Soil	NBF-992	05/23/1996	~427	1.1	~8.5	<1.49	7.9	1.38	1.7	563
21SD96-01 0-3"	Sediment	NBF-959	05/22/1996	~332	0.72	15.5	5.66	7.2	4.45	4.0	2010
21SD96-01 0-3" (Dup)	Sediment	NBF-960	05/22/1996	~488	0.57	10.8	4.98	7.3	3.91	4.2	1900
21SD96-02 0-3"	Sediment	NBF-961	05/22/1996	~429	No Data	12.2	7.23	No Data	8.01	4.4	No Data
21SS96-N 0-3"	Soil	NBF-957	05/22/1996	~203	6.2	~10.8	2.55	7.3	1.25	~2.3	499
21SS96-N 3-24"	Soil	NBF-958	05/22/1996	~281	1.9	~11.1	3.72	7.7	2.99	~2.1	504
21SS96-S 0-3"	Soil	NBF-962	05/22/1996	~214	4.3	~12.0	4.45	7.3	3.34	~3.2	299
21SS96-S 3-24"	Soil	NBF-963	05/22/1996	~186	3.3	~12.2	8.72	7.1	7.72	~2.5	230
22SD96-01 0-3"	Sediment	NBF-964	05/22/1996	~320	0.59	17.5	10.73	7.4	11.22	4.5	2430
22SD96-02 0-3"	Sediment	NBF-967	05/22/1996	~302	0.25	12.2	7.59	7.9	5.93	4.7	1940
22SD96-03 0-3"	Sediment	NBF-970	05/22/1996	~275	0.44	12.4	8.68	7.7	5.77	4.2	2130
22SD96-04 0-3"	Sediment	NBF-969	05/22/1996	~309	0.43	13.0	5.95	8.0	6.20	3.9	1940
22SD96-05 0-3"	Sediment	NBF-968	05/22/1996	~346	0.39	20.4	5.59	7.3	4.42	4.9	1830
22SD96-06 0-3"	Sediment	NBF-909	05/24/1996	~374	No Data	15.0	~12.34	No Data	10.89	4.4	No Data

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "~" indicates an estimated value.
[b] (Nitrate + nitrite) as nitrogen.

Table A-19 (continued). Ecological Risk Assessment Soil and Sediment Samples Chemistry Data Collected At and Near MMTS During 1996[a]

Sample Location	Sample Type	Ticket Number	Sample Date	Na (mg/kg)	NO_3+NO_2-N[b] (mg/kg)	Pb (mg/kg)	Pb-210 (pCi/g)	pH	Ra-226 (pCi/g)	Se (mg/kg)	SO_4 (mg/kg)
22SD96-07 9-15"	Sediment	NBF-430	06/06/1996	~330	~0.15	15.9	17.78	7.6	19.91	4.4	483
22SD96-07 9-15" (Dup)	Sediment	NBF-431	06/06/1996	~283	~0.05	15.9	16.58	7.7	18.09	3.9	435
22SS96-N 0-3"	Soil	NBF-965	05/22/1996	~489	3.3	~15.9	13.10	7.5	12.23	~4.1	534
22SS96-N 3-24"	Soil	NBF-966	05/22/1996	~301	2.2	~16.6	33.82	7.7	36.76	~2.8	262
22SS96-N2 0-3"	Soil	NBF-971	05/22/1996	~331	2.9	~16.6	30.87	7.8	30.97	~3.8	620
22SS96-N2 3-24"	Soil	NBF-972	05/22/1996	~338	1.6	~18.6	53.91	7.6	62.26	~3.5	309
23SD96-01 0-3"	Sediment	NBF-901	05/24/1996	~249	0.60	14.3	50.58	7.7	38.66	5.3	377
23SD96-02 0-3"	Sediment	NBF-902	05/24/1996	~338	0.66	13.9	10.61	7.7	9.03	6.8	1080
23SD96-03 0-3"	Sediment	NBF-903	05/24/1996	~322	2.1	22.7	7.56	7.2	7.62	5.3	849
23SD96-04 0-3"	Sediment	NBF-904	05/24/1996	~239	4.0	12.1	3.85	7.7	4.18	3.8	296
23SD96-05 0-3"	Sediment	NBF-905	05/24/1996	~269	1.4	12.2	4.48	7.6	5.02	3.7	417
23SD96-06 0-3"	Sediment	NBF-906	05/24/1996	~315	No Data	16.2	13.94	No Data	19.65	5.1	No Data
23SD96-07 18-24"	Sediment	NBF-433	06/06/1996	~255	~0.04	13.9	8.65	7.2	8.03	3.2	773
23SD96-07 18-24" (Dup)	Sediment	NBF-434	06/06/1996	~271	~0.23	14.4	9.20	7.2	8.63	3.1	761
23SS96-N 0-3"	Soil	NBF-949	05/24/1996	~364	3.8	13.3	14.41	7.8	16.47	2.8	396
23SS96-N 3-24"	Soil	NBF-950	05/24/1996	~269	0.67	13.2	15.72	7.9	22.72	2.9	222
23SS96-S 0-3"	Soil	NBF-907	05/24/1996	~143	4.0	11.6	6.24	7.4	7.33	2.8	331
23SS96-S 3-24"	Soil	NBF-908	05/24/1996	~146	2.2	9.6	2.23	7.8	2.76	1.9	173
24SD96-01 0-3"	Sediment	NBF-914	05/28/1996	~352	0.28	~19.9	6.63	8.0	6.58	~6.3	695
24SD96-02 0-3"	Sediment	NBF-915	05/28/1996	~313	No Data	~12.2	6.70	No Data	6.17	~4.2	No Data
24SS96-N 0-3"	Soil	NBF-910	05/28/1996	~271	3.5	10.9	<1.87	7.7	2.22	1.3	110
24SS96-N 3-24"	Soil	NBF-911	05/28/1996	~103	2.4	10.0	<1.75	8.0	1.74	1.3	99.6
24SS96-S 0-3"	Soil	NBF-912	05/28/1996	~277	1.3	16.3	16.79	7.8	23.61	3.6	228
24SS96-S 3-24"	Soil	NBF-913	05/28/1996	~310	2.9	17.2	23.19	7.9	33.11	3.5	165
25SD96-01 0-3"	Sediment	NBF-868	05/29/1996	~128	0.42	~10.5	2.87	7.4	2.64	~0.62	561
25SD96-02 0-3"	Sediment	NBF-867	05/29/1996	~132	No Data	~7.3	3.22	No Data	2.49	~0.50	No Data
25SS96-N 0-3"	Soil	NBF-869	05/29/1996	~247	3.0	14.8	12.30	7.3	17.52	2.5	416
25SS96-N 3-24"	Soil	NBF-870	05/29/1996	~252	2.4	10.9	5.50	7.6	5.58	1.7	270
25SS96-N 3-24" (Dup)	Soil	NBF-871	05/29/1996	~246	2.2	11.2	5.64	7.7	6.04	1.8	248
25SS96-S 0-3"	Soil	NBF-865	05/29/1996	~220	3.0	17.3	22.16	7.6	21.18	2.1	42.5
25SS96-S 3-24"	Soil	NBF-866	05/29/1996	~281	2.6	14.2	13.83	7.7	14.30	2.6	271

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "~" indicates an estimated value.
[b] (Nitrate + nitrite) as nitrogen.

Table A-19 (continued). Ecological Risk Assessment Soil and Sediment Samples Chemistry Data Collected At and Near MMTS During 1996[a]

Sample Location	Sample Type	Ticket Number	Sample Date	Th-230 (pCi/g)	Th-232 (pCi/g)	U (mg/kg)	U-234 (pCi/g)	U-235 (pCi/g)	U-238 (pCi/g)	V (mg/kg)	Zn (mg/kg)
14SD96-01 0-3"	Sediment	NBF-330	05/20/1996	1.72	2.05	3.7	1.20	<0.10	1.13	21.9	39.7
14SD96-02 0-3"	Sediment	NBF-331	05/20/1996	1.64	2.22	3.8	1.38	<0.07	1.24	16.9	46.3
14SD96-03 0-3"	Sediment	NBF-332	05/20/1996	2.10	2.16	4.2	1.37	<0.09	1.45	19.1	40.2
14SD96-04 0-3"	Sediment	NBF-333	05/20/1996	1.44	1.78	4.1	1.33	<0.14	1.25	20.4	44.5
14SD96-05 0-3"	Sediment	NBF-334	05/20/1996	1.86	1.53	3.8	1.26	<0.09	1.36	14.7	42.3
14SD96-06 36-42"	Sediment	NBF-429	06/05/1996	1.50	1.75	3.7	1.18	0.07	1.26	16.4	50.1
14SS96-N 0-3"	Soil	NBF-326	05/20/1996	1.29	1.37	2.5	0.81	<0.13	0.88	23.1	35.1
14SS96-N 3-24"	Soil	NBF-327	05/20/1996	1.23	1.51	2.4	0.89	<0.09	0.84	21.2	30.5
14SS96-S 0-3"	Soil	NBF-328	05/20/1996	1.55	2.29	2.7	1.00	<0.12	0.94	24.0	31.9
14SS96-S 3-24"	Soil	NBF-329	05/20/1996	1.19	2.21	2.7	0.78	<0.18	1.06	22.9	32.7
15SD96-01 0-3"	Sediment	NBF-338	05/20/1996	1.61	3.15	3.9	1.47	<0.08	1.52	28.6	59.6
15SS96-N 0-3"	Soil	NBF-335	05/20/1996	1.07	1.53	2.7	0.86	<0.12	0.79	18.1	32.9
15SS96-N 3-24"	Soil	NBF-336	05/20/1996	1.44	2.20	3.2	0.97	<0.10	0.98	31.1	33.4
15SS96-S 0-3"	Soil	NBF-337	05/20/1996	1.39	1.62	2.8	0.86	<0.13	1.09	22.6	45.7
15SS96-S 3-24"	Soil	NBF-339	05/20/1996	1.68	1.94	2.7	0.95	<0.09	0.73	25.6	40.5
16SD96-01 0-3"	Sediment	NBF-342	05/21/1996	1.67	2.69	4.1	1.02	<0.10	1.37	29.1	63.3
16SS96-N 0-3"	Soil	NBF-340	05/21/1996	1.11	1.83	2.6	1.01	<0.10	0.92	25.2	33.5
16SS96-N 3-24"	Soil	NBF-341	05/21/1996	1.68	1.27	2.9	0.93	<0.09	0.89	16.7	30.0
16SS96-S 0-3"	Soil	NBF-343	05/21/1996	1.11	1.72	2.7	0.77	<0.08	0.85	17.7	29.9
16SS96-S 3-24"	Soil	NBF-344	05/21/1996	1.26	1.46	2.6	0.95	<0.10	0.74	26.7	39.1
17SD96-01 0-3"	Sediment	NBF-951	05/21/1996	1.79	1.17	3.4	1.10	<0.07	1.13	18.1 -	39.3
17SS96-N 0-3"	Soil	NBF-349	05/21/1996	0.96	0.92	2.1	0.72	<0.11	0.80	16.6	23.2
17SS96-N 3-24"	Soil	NBF-350	05/21/1996	1.42	1.77	2.6	0.77	<0.08	0.82	9.5	24.4
17SS96-S 0-3"	Soil	NBF-346	05/21/1996	0.99	1.46	1.8	0.82	<0.11	0.91	9.8	19.1
17SS96-S 0-3" (Dup)	Soil	NBF-348	05/21/1996	1.08	1.68	2.4	0.71	<0.09	0.65	18.6	27.4
17SS96-S 3-24"	Soil	NBF-347	05/21/1996	1.10	1.25	2.3	0.52	<0.09	0.71	10.3	22.8
18SD96-01 0-3"	Sediment	NBF-999	05/23/1996	1.61	1.04	4.9	1.57	<0.06	1.56	14.9	30.1
18SD96-02 0-3"	Sediment	NBF-928	05/23/1996	1.87	1.63	5.8	2.15	<0.08	2.06	17.4	33.0
18SD96-03 0-3"	Sediment	NBF-927	05/23/1996	1.67	2.02	4.8	1.74	<0.06	1.80	11.5	22.9
18SD96-04 0-3"	Sediment	NBF-929	05/23/1996	1.84	1.86	5.5	1.78	<0.07	1.98	22.7	35.5

[a]A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "-" indicates an estimated value.

Table A-19 (continued). Ecological Risk Assessment Soil and Sediment Samples Chemistry Data Collected At and Near MMTS During 1996[a]

Sample Location	Sample Type	Ticket Number	Sample Date	Th-230 (pCi/g)	Th-232 (pCi/g)	U (mg/kg)	U-234 (pCi/g)	U-235 (pCi/g)	U-238 (pCi/g)	V (mg/kg)	Zn (mg/kg)
18SD96-05 0-3"	Sediment	NBF-926	05/23/1996	1.56	1.93	6.0	1.92	<0.08	2.27	19.3	38.7
18SD96-06 0-3"	Sediment	NBF-932	05/23/1996	1.66	2.13	5.3	1.83	<0.09	2.14	15.8	30.3
18SD96-07 24-30"	Sediment	NBF-428	06/05/1996	1.73	2.01	4.5	1.51	0.09	1.48	13.5	43.7
18SS96-E 0-3"	Soil	NBF-930	05/23/1996	2.30	1.30	2.7	0.96	<0.04	1.00	~14.3	21.2
18SS96-E 3-24"	Soil	NBF-931	05/23/1996	1.82	1.29	2.5	0.90	<0.03	0.89	~13.4	20.3
18SS96-W 0-3"	Soil	NBF-997	05/23/1996	2.13	1.14	3.1	1.18	<0.03	1.16	~17.0	27.1
18SS96-W 3-24"	Soil	NBF-998	05/23/1996	2.57	1.12	2.9	1.11	<0.04	1.28	~20.4	24.9
19SD96-01 0-3"	Sediment	NBF-954	05/21/1996	1.57	1.88	4.9	1.77	<0.08	1.82	21.4	41.1
19SS96-E 0-3"	Soil	NBF-955	05/21/1996	1.26	1.39	2.9	0.98	<0.08	1.01	20.2	25.2
19SS96-E 3-24"	Soil	NBF-956	05/21/1996	<1.16	1.14	2.6	1.00	<0.15	0.90	12.8	~22.3
19SS96-W 0-3"	Soil	NBF-952	05/21/1996	1.13	1.30	2.6	0.78	<0.08	0.93	10.7	20.0
19SS96-W 3-24"	Soil	NBF-953	05/21/1996	1.49	1.70	4.2	1.39	<0.10	1.34	23.2	29.2
20SD96-01 0-3"	Sediment	NBF-995	05/23/1996	1.64	2.46	4.5	1.62	<0.11	1.60	18.1	36.6
20SS96-E 0-3"	Soil	NBF-993	05/23/1996	4.23	1.24	4.5	1.63	<0.04	1.69	~23.5	27.7
20SS96-E 3-24"	Soil	NBF-994	05/23/1996	8.41	1.48	7.2	2.46	<0.03	2.50	~39.5	29.3
20SS96-W 0-3"	Soil	NBF-991	05/23/1996	1.34	1.30	3.8	1.13	<0.04	1.20	~12.0	26.8
20SS96-W 0-3" (Dup)	Soil	NBF-996	05/23/1996	1.31	1.36	3.7	1.08	<0.04	1.24	~13.0	27.8
20SS96-W 3-24"	Soil	NBF-992	05/23/1996	1.35	1.59	4.6	1.56	<0.04	1.55	~14.7	26.7
21SD96-01 0-3"	Sediment	NBF-959	05/22/1996	6.70	1.83	16.6	5.57	0.36	5.62	67.3	55.8
21SD96-01 0-3" (Dup)	Sediment	NBF-960	05/22/1996	5.98	1.46	16.4	5.25	<0.07	5.82	66.1	52.4
21SD96-02 0-3"	Sediment	NBF-961	05/22/1996	9.65	2.55	23.5	8.18	0.38	7.90	82.2	52.3
21SS96-N 0-3"	Soil	NBF-957	05/22/1996	<1.79	1.17	3.7	0.99	<0.07	1.17	22.1	~42.8
21SS96-N 3-24"	Soil	NBF-958	05/22/1996	<3.29	1.59	5.4	1.67	<0.09	1.95	24.5	~41.8
21SS96-S 0-3"	Soil	NBF-962	05/22/1996	4.04	2.20	7.0	2.30	<0.15	2.71	30.3	~42.5
21SS96-S 3-24"	Soil	NBF-963	05/22/1996	7.39	2.19	9.6	3.39	<0.09	3.40	35.2	~45.4
22SD96-01 0-3"	Sediment	NBF-964	05/22/1996	13.56	3.40	19.1	6.90	<0.08	6.86	82.6	69.4
22SD96-02 0-3"	Sediment	NBF-967	05/22/1996	7.79	2.68	54.3	19.27	0.97	18.97	71.6	57.6
22SD96-03 0-3"	Sediment	NBF-970	05/22/1996	8.49	2.18	40.1	13.98	0.60	13.84	79.5	59.3
22SD96-04 0-3"	Sediment	NBF-969	05/22/1996	6.25	2.35	20.3	7.42	<0.06	7.40	68.0	63.5
22SD96-05 0-3"	Sediment	NBF-968	05/22/1996	5.80	1.78	17.8	5.90	0.68	5.97	64.9	74.1
22SD96-06 0-3"	Sediment	NBF-909	05/24/1996	14.94	~2.56	35.2	11.53	0.54	12.06	102	71.2

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "~" indicates an estimated value.

Table A-19 (continued). Ecological Risk Assessment Soil and Sediment Samples Chemistry Data Collected At and Near MMTS During 1996[a]

Sample Location	Sample Type	Ticket Number	Sample Date	Th-230 (pCi/g)	Th-232 (pCi/g)	U (mg/kg)	U-234 (pCi/g)	U-235 (pCi/g)	U-238 (pCi/g)	V (mg/kg)	Zn (mg/kg)
22SD96-07 9-15"	Sediment	NBF-430	06/06/1996	20.97	2.34	52.8	14.32	0.66	14.40	125	68.3
22SD96-07 9-15" (Dup)	Sediment	NBF-431	06/06/1996	23.21	1.72	40.8	14.96	0.77	14.79	119	64.6
22SS96-N 0-3"	Soil	NBF-965	05/22/1996	15.75	1.65	16.2	5.50	0.49	5.97	78.0	-52.8
22SS96-N 3-24"	Soil	NBF-966	05/22/1996	45.19	2.48	26.7	9.21	0.40	9.26	157	-55.3
22SS96-N2 0-3"	Soil	NBF-971	05/22/1996	42.74	2.79	27.0	9.94	0.47	9.58	144	-58.2
22SS96-N2 3-24"	Soil	NBF-972	05/22/1996	75.50	3.32	37.6	13.67	0.72	13.67	242	-56.0
23SD96-01 0-3"	Sediment	NBF-901	05/24/1996	32.43	2.93	27.9	10.22	0.45	10.03	144	52.5
23SD96-02 0-3"	Sediment	NBF-902	05/24/1996	12.18	2.24	28.4	9.66	0.56	9.87	108	60.9
23SD96-03 0-3"	Sediment	NBF-903	05/24/1996	10.11	2.66	18.0	5.93	0.41	6.03	103	63.8
23SD96-04 0-3"	Sediment	NBF-904	05/24/1996	5.67	1.95	9.6	3.33	<0.07	3.49	50.8	54.4
23SD96-05 0-3"	Sediment	NBF-905	05/24/1996	4.99	2.38	13.3	4.44	0.26	4.49	50.9	57.1
23SD96-06 0-3"	Sediment	NBF-906	05/24/1996	26.48	2.71	25.6	9.21	0.41	9.58	117	61.8
23SD96-07 18-24"	Sediment	NBF-433	06/06/1996	8.70	2.12	27.2	9.28	0.48	9.52	80.2	59.6
23SD96-07 18-24" (Dup)	Sediment	NBF-434	06/06/1996	8.98	2.24	26.4	9.22	0.42	9.15	79.1	58.6
23SS96-N 0-3"	Soil	NBF-949	05/24/1996	22.61	1.51	17.9	6.28	0.26	6.61	-94.5	48.8
23SS96-N 3-24"	Soil	NBF-950	05/24/1996	22.81	2.44	14.9	6.45	<0.13	6.73	-91.2	48.0
23SS96-S 0-3"	Soil	NBF-907	05/24/1996	8.67	1.47	11.1	3.86	<0.06	3.74	-48.3	47.8
23SS96-S 3-24"	Soil	NBF-908	05/24/1996	3.69	<0.37	11.1	3.74	<0.11	4.01	-24.3	45.1
24SD96-01 0-3"	Sediment	NBF-914	05/28/1996	7.16	2.20	35.2	12.03	0.83	11.60	97.7	58.7
24SD96-02 0-3"	Sediment	NBF-915	05/28/1996	6.48	1.76	30.3	10.26	0.41	9.94	90.0	51.2
24SS96-N 0-3"	Soil	NBF-910	05/28/1996	1.67	2.11	3.5	1.21	0.12	1.31	30.1	44.3
24SS96-N 3-24"	Soil	NBF-911	05/28/1996	1.65	1.81	3.3	1.27	<0.09	1.23	18.0	44.7
24SS96-S 0-3"	Soil	NBF-912	05/28/1996	1.64	1.69	24.4	0.95	0.13	1.41	126	59.8
24SS96-S 3-24"	Soil	NBF-913	05/28/1996	34.13	1.51	26.1	9.09	0.46	9.26	141	67.4
25SD96-01 0-3"	Sediment	NBF-868	05/29/1996	2.31	1.14	6.9	2.44	0.11	2.25	23.2	29.2
25SD96-02 0-3"	Sediment	NBF-867	05/29/1996	2.47	1.07	6.2	2.02	0.12	2.07	29.2	28.9
25SS96-N 0-3"	Soil	NBF-869	05/29/1996	24.58	1.36	17.4	5.37	0.19	5.90	-91.8	58.2
25SS96-N 3-24"	Soil	NBF-870	05/29/1996	6.48	1.28	16.6	5.90	0.36	6.21	-42.4	48.7
25SS96-N 3-24" (Dup)	Soil	NBF-871	05/29/1996	7.12	1.63	17.9	5.86	0.21	5.96	-44.3	51.7
25SS96-S 0-3"	Soil	NBF-865	05/29/1996	29.99	1.99	22.4	7.30	0.33	7.06	-91.0	66.7
25SS96-S 3-24"	Soil	NBF-866	05/29/1996	18.41	1.82	21.9	7.10	0.25	7.55	-71.5	64.5

[a] A "<" indicates that the maximum concentration was below the detection limit (number shown is detection limit). A "~" indicates an estimated value.

Table A-20. Field Radiological Measurements At Sediment Collected During 1996

Sample Location	Ra226 Meas. Type [a]	Ra226 pCi/g	Ground Gamma μR/h	Waist Gamma μR/h	Sample Location	Ra226 Meas. Type [a]	Ra226 pCi/g	Ground Gamma μR/h	Waist Gamma μR/h
14SD96-01 0"	TC	1.1	14	15	22SD96-03 30"	TC	13.0		
14SD96-01 6"	TC	2.1			22SD96-03 36"	TC	10.0		
14SD96-01 12"	TC	2.1			22SD96-03 42"	TC	8.0		
14SD96-01 18"	TC	2.4			22SD96-03 48"	TC	8.0		
14SD96-01 24"	TC	2.9			23SD96-02 0"	TC	2.8	32	21
14SD96-01 30"	TC	3.1			23SD96-02 6"	TC	2.3		
14SD96-01 36"	TC	2.9			23SD96-02 12"	TC	8.4		
14SD96-02 0"	TC	1.2	14	15	23SD96-02 18"	TC	8.7		
14SD96-02 6"	TC	2.0			23SD96-02 24"	TC	6.9		
14SD96-02 12"	TC	1.7			23SD96-02 30"	TC	8.6		
14SD96-02 18"	TC	2.2			23SD96-02 36"	TC	11.0		
14SD96-02 24"	TC	2.7			23SD96-02 42"	TC	12.1		
14SD96-02 30"	TC	3.3			23SD96-02 48"	TC	10.8		
14SD96-02 36"	TC	2.9			23SD96-05 0"	TC	3.0	21	17
18SD96-03 0"	TC	1.2	12	12	23SD96-05 6"	TC	1.6		
18SD96-03 6"	TC	2.0			23SD96-05 12"	TC	2.3		
18SD96-03 12"	TC	2.3			23SD96-05 18"	TC	2.7		
18SD96-03 18"	TC	2.2			23SD96-05 24"	TC	3.0		
18SD96-03 24"	TC	2.0			23SD96-05 30"	TC	3.5		
18SD96-03 30"	TC	2.3			23SD96-05 36"	TC	2.7		
18SD96-05 0"	TC	1.1	11	11	23SD96-05 42"	TC	2.6		
18SD96-05 6"	TC	2.4							
18SD96-05 12"	TC	2.6							
18SD96-05 18"	TC	2.5							
18SD96-05 24"	TC	3.2							
18SD96-05 30"	TC	2.6							
18SD96-05 36"	TC	2.3							
18SD96-05 42"	TC	2.0							
22SD96-02 0"	TC	5.4	18	21					
22SD96-02 6"	TC	12.5							
22SD96-02 12"	TC	18.0							
22SD96-02 18"	TC	14.6							
22SD96-02 24"	TC	12.5							
22SD96-02 30"	TC	6.5							
22SD96-03 0"	TC	2.2	14	16					
22SD96-03 6"	TC	4.9							
22SD96-03 12"	TC	8.1							
22SD96-03 18"	TC	8.3							
22SD96-03 24"	TC	11.0							

[a] Radium-226 field measurement types: TC = Total Count Borehole.